SECTION 4: KEY FINDINGS

4.1 Introduction

This section presents the key findings of the survey. Where possible, comparisons are made with the results of previous NCR surveys; this is done partly by retaining (also where possible) a similar format to previous NCR survey reports. The presentation looks at the NCR as a whole although – where appropriate – findings also are presented separately for Ottawa and Outaouais residents.

4.2 Household Characteristics

The household is the basic survey unit, so the discussion begins with a profile of the characteristics of the NCR's households. **Table 4-1** breaks down the type of dwelling units. Because dwelling unit type can be an indicator of household size, location within the urban area, household income and vehicle ownership, it can be a determinant of travel activity. Note that the different categorizations used in different survey years limit the direct comparability of the data. Nonetheless, single detached units continue to dominate (44.4%), although apartments and condominiums (i.e., multi-unit buildings) have grown quickly (31.6%). Also important, it should be noted that in 2011 dwelling unit type was used as one of the expansion variables (thus adding an increased level of precision to the 2011 survey results, whereas in previous years only total households was used). As a result, the apparent drop in single detached units between 2011 and 2005 may reflect inaccuracies with the distribution of the 2005 dwelling unit types (although not with the more critical total households).

Note that tabulations have been rounded to the nearest 100, for convenience. As a result, totals – in this case, the sum of the Ottawa and Outaouais dwelling unit counts for each type – might not sum in the table exactly to the Total Survey Area values presented in the table.

Figure 4-1 shows the distribution of household income. New in 2011, the survey asked survey participants to identify in which of eight income bands their household belonged. This categorization allowed participants to respond quickly without having to do precise and time-consuming tallies. This approximation enabled a high response rate to this question – 77% - to what can be a contentious topic in a public survey. Moreover, the bands are sufficient for analyzing different categories' propensity for travel and match categories used by Statistics Canada in its publications.

From the figure, it can be seen that almost half of all reporting households (46.6%) are in $30,000 - $89,999 household income range. The most common single category is the $30,000 - $59,999 range, at almost ¼ of all households that responded to this question (24.2%).

Table 4-2 breaks down household income by dwelling unit type. **Table 4-3** provides a similar break down, this time of household income categorizes by household size (that is, the number of occupants). **Table 4-4** presents a break down household income categories by household vehicle availability.[10] For ease of reference, both tabulations include those households whose size and vehicles were recorded but which declined to provide their income.

[10] 'Availability' refers to all vehicles that are available for personal use by a household, regardless of who owns the vehicle (e.g., a company car may be available for a householder's use, even though it is owned by an employer).

Table 4-1: Type of Household Dwelling

Ottawa Residents

Survey Year	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Other [1]	Total [2]
2011 [3]	164,000	29,900	69,300	85,800	30,700	--	379,800
2005	185,300	24,300	52,900	77,000 [5]		8,400	347,900
1995 [4]	182,900			90,300		--	273,200
1986	103,700	19,500	29,000	69,800 [5]		6,000	228,100

Outaouais Residents

Survey Year	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Other [1]	Total [2]
2011 [3]	62,500	17,300	5,500	35,200	9,700	--	130,200
2005	69,400	15,000	6,200	22,200 [5]		4,600	117,500
1995 [4]	63,300			29,700		--	93,000
1986	39,100	5,900	4,500	17,100 [5]		3,900	70,300

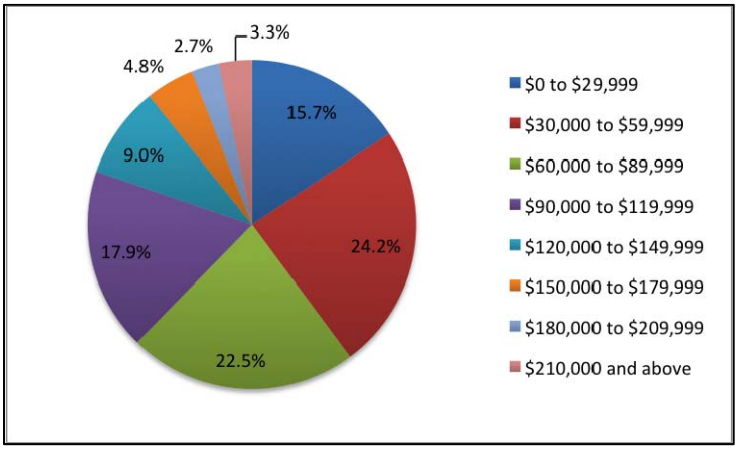
Total Survey Area Residents

Survey Year	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Other [1]	Total [2]
2011 [3]	226,500	47,200	74,900	121,100	40,400	--	510,100
2005	254,700	39,200	59,200	99,200 [5]		13,000	465,400
1995 [4]	246,200			120,000		--	366,200
1986	142,800	25,400	33,500	86,900 [5]		9,900	298,500

Note: Values may not add due to rounding. Other notes:

1. 'Other' category not included in 2011.
2. Due to differences in categories in different survey years, the totals may not be directly comparable.
3. 2011 data were weighted by three dwelling type groupings; data from previous cycles were not.
4. In 1995, there were two categories: house (separate entrance) and apartment (common entrance). Data provided by TRANS.
5. Combines "tenant' and 'owner' categories of apartments / condos.

Figure 4-1: Distribution of Household Income Groups, 2011



Distribution based on 77% of surveyed households that responded to this question.
Percentages may not add up exactly to 100% due to rounding.

Table 4-2: Household Income by Household Dwelling Type, 2011

Ottawa Residents

Household Income	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Total
$0 to $29,999	6,100	2,000	6,700	25,700	3,200	43,700
$30,000 to $59,999	17,800	5,500	14,900	22,700	7,500	68,400
$60,000 to $89,999	25,800	6,100	15,200	12,500	6,500	66,100
$90,000 to $119,999	29,300	4,900	11,100	5,400	3,500	54,200
$120,000 to $149,999	18,200	2,200	4,800	1,800	800	27,800
$150,000 to $179,999	10,700	1,300	1,800	500	800	15,100
$180,000 to $209,999	7,200	600	800	100	300	9,000
$210,000 and above	8,700	500	700	600	500	11,000
Total, all categories *	123,800	23,100	56,000	23,100	69,300	295,300
Decline / Don't know	40,300	6,800	13,500	16,500	7,500	84,600

Outaouais Residents

Household Income	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Total
$0 to $29,999	4,200	1,200	500	11,200	900	18,000
$30,000 to $59,999	9,700	3,500	1,500	9,000	2,700	26,400
$60,000 to $89,999	11,600	3,600	1,100	3,500	2,200	22,000
$90,000 to $119,999	10,400	2,800	700	1,400	900	16,200
$120,000 to $149,999	5,500	1,100	300	300	300	7,500
$150,000 to $179,999	2,600	500	-	200	100	3,400
$180,000 to $209,999	1,500	200	-	-	-	1,700
$210,000 and above	1,500	100	100	100	-	1,800
Total, all categories *	47,000	13,000	4,200	7,100	25,700	97,000
Decline / Don't know	15,400	4,200	1,300	9,500	2,600	33,000

Total Survey Area Residents

Household Income	Single-detached	Semi-detached	Row / Townhouse	Apartment or Condo (tenant)	Apartment or Condo (owner)	Total
$0 to $29,999	10,300	3,200	7,200	36,800	4,100	61,600
$30,000 to $59,999	27,500	9,000	16,300	31,700	10,300	94,800
$60,000 to $89,999	37,400	9,800	16,300	16,000	8,700	88,200
$90,000 to $119,999	39,600	7,700	11,700	6,800	4,400	70,200
$120,000 to $149,999	23,700	3,300	5,100	2,200	1,200	35,500
$150,000 to $179,999	13,400	1,800	1,800	800	900	18,700
$180,000 to $209,999	8,700	800	800	100	300	10,700
$210,000 and above	10,200	600	800	700	500	12,800
Total, all categories *	170,800	36,200	60,000	30,400	95,100	392,500
Decline / Don't know	55,700	11,000	14,900	26,000	10,100	117,700

Values may not add due to rounding.

* Excludes decline / don't know.

Table 4-3: Household Income by Household Size, 2011

Ottawa Residents

Household Income	1 person	2 persons	3 persons	4 persons	5 + persons	Total
$0 to $29,999	24,400	10,200	4,400	2,300	2,400	43,700
$30,000 to $59,999	29,000	22,400	7,500	5,200	4,200	68,300
$60,000 to $89,999	19,200	24,000	10,100	8,400	4,400	66,100
$90,000 to $119,999	7,600	19,700	10,700	10,900	5,200	54,100
$120,000 to $149,999	1,200	9,700	6,100	8,000	3,000	28,000
$150,000 to $179,999	600	4,800	3,700	4,400	1,700	15,200
$180,000 to $209,999	300	2,300	1,800	3,200	1,400	9,000
$210,000 and above	600	2,900	2,500	3,300	1,600	10,900
Total, all categories *	82,900	96,000	46,800	45,700	23,900	295,300
Decline / Don't know	24,600	29,400	13,000	11,900	5,700	84,600

Outaouais Residents

Household Income	1 person	2 persons	3 persons	4 persons	5 + persons	Total
$0 to $29,999	10,900	4,500	1,500	600	600	18,100
$30,000 to $59,999	10,400	9,500	3,300	2,100	1,200	26,500
$60,000 to $89,999	3,900	8,200	5,200	3,200	1,500	22,000
$90,000 to $119,999	1,900	5,600	3,600	3,700	1,400	16,200
$120,000 to $149,999	300	2,300	1,700	2,400	800	7,500
$150,000 to $179,999	200	1,000	800	1,100	400	3,500
$180,000 to $209,999	--	300	400	700	200	1,600
$210,000 and above	200	500	400	600	200	1,900
Total, all categories *	27,800	31,900	16,900	14,400	6,300	97,300
Decline / Don't know	10,400	12,400	4,700	3,900	1,700	33,100

Total Survey Area Residents

Household Income	1 person	2 persons	3 persons	4 persons	5 + persons	Total
$0 to $29,999	35,300	14,700	5,900	2,900	2,900	61,700
$30,000 to $59,999	39,400	32,000	10,800	7,200	5,400	94,800
$60,000 to $89,999	23,100	32,200	15,400	11,600	6,000	88,300
$90,000 to $119,999	9,400	25,300	14,300	14,600	6,600	70,200
$120,000 to $149,999	1,500	12,000	7,800	10,300	3,800	35,400
$150,000 to $179,999	800	5,800	4,400	5,500	2,000	18,500
$180,000 to $209,999	300	2,500	2,300	3,900	1,700	10,700
$210,000 and above	700	3,400	2,900	3,900	1,900	12,800
Total, all categories *	110,500	127,900	63,800	59,900	30,300	392,400
Decline / Don't know	35,000	41,800	17,700	15,800	7,400	117,700

Values may not add due to rounding.

* Excludes decline / don't know.

Table 4-4: Household Income by Number of Household Vehicles, 2011

Ottawa Residents

Household Income	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles	Total
$0 to $29,999	22,000	18,000	3,000	500	100	43,600
$30,000 to $59,999	13,000	41,300	11,700	1,700	600	68,300
$60,000 to $89,999	6,600	36,300	19,600	2,900	600	66,000
$90,000 to $119,999	2,700	23,100	23,200	4,100	900	54,000
$120,000 to $149,999	700	8,100	15,500	2,800	800	27,900
$150,000 to $179,999	300	3,900	8,700	1,500	800	15,200
$180,000 to $209,999	200	1,800	5,400	1,100	300	8,800
$210,000 and above	100	2,200	6,000	2,100	600	11,000
Total, all categories *	45,600	134,700	93,100	16,700	4,700	294,800
Decline / Don't know	13,400	36,700	27,700	5,100	1,800	84,700

Outaouais Residents

Household Income	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles	Total
$0 to $29,999	6,500	9,100	2,100	300	-	18,000
$30,000 to $59,999	2,100	16,200	6,600	1,300	300	26,500
$60,000 to $89,999	600	9,800	9,600	1,500	400	21,900
$90,000 to $119,999	200	5,100	8,500	1,700	600	16,100
$120,000 to $149,999	-	1,600	4,700	900	300	7,500
$150,000 to $179,999	-	600	2,000	500	300	3,400
$180,000 to $209,999	-	200	900	400	100	1,600
$210,000 and above	-	300	1,000	300	200	1,800
Total, all categories *	9,400	42,900	35,400	6,900	2,200	96,800
Decline / Don't know	4,300	15,100	10,700	2,100	800	33,000

Total Survey Area Residents

Household Income	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles	Total
$0 to $29,999	28,500	27,000	5,200	800	200	61,700
$30,000 to $59,999	15,100	57,500	18,300	3,000	900	94,800
$60,000 to $89,999	7,200	46,200	29,200	4,500	1,100	88,200
$90,000 to $119,999	2,900	28,200	31,800	5,800	1,600	70,300
$120,000 to $149,999	700	9,700	20,200	3,700	1,200	35,500
$150,000 to $179,999	300	4,500	10,800	1,900	1,100	18,600
$180,000 to $209,999	200	2,000	6,400	1,500	500	10,600
$210,000 and above	100	2,500	7,000	2,400	800	12,800
Total, all categories *	55,000	177,600	128,900	23,600	7,400	392,500
Decline / Don't know	17,700	51,800	38,400	7,300	2,600	117,800

Values may not add due to rounding.

* Excludes decline / don't know.

Table 4-5, **Table 4-6** and **Table 4-7** tabulate the percentage distribution of household income by dwelling unit type, household size and household vehicles, respectively. (These calculations are based only on the 77% of households that responded to the income question.) From the shaded cells in **Table 4-5**, it can be seen that half (50.1%) of the households are concentrated among single-detached homes and tenant-occupied apartments / condominiums. In **Table 4-6**, it can be seen that almost ½ (47.7%) of the households are concentrated among one- and two-person households (representing 3/5 or 60.8% of all reporting households), mostly under the $90,000 income threshold. **Table 4-7** shows a similar concentration of respondents, with almost 2/3 (63.3%)

of the households concentrated among zero-, one- or two-vehicle households. Almost ½ (45.2%) of all households have one vehicle, and almost 4/5 (78.1%) of reporting households have one or two vehicles.

Table 4-5: Household Income by Dwelling Unit Type - % Distribution, 2011

Total Survey Area Residents

Household Income	Single-detached	Semi-detached	Row/Townhouse	Apartment / Condo (tenant)	Apartment / Condo (owner)	Total
$0 to $29,999	2.6%	0.8%	1.8%	**9.4%**	1.0%	15.7%
$30,000 to $59,999	**7.0%**	2.3%	4.2%	**8.1%**	2.6%	**24.2%**
$60,000 to $89,999	**9.5%**	2.5%	4.2%	4.1%	2.2%	**22.5%**
$90,000 to $119,999	**10.1%**	2.0%	3.0%	1.7%	1.1%	17.9%
$120,000 to $149,999	**6.0%**	0.8%	1.3%	0.6%	0.3%	9.0%
$150,000 to $179,999	3.4%	0.5%	0.5%	0.2%	0.2%	4.8%
$180,000 to $209,999	2.2%	0.2%	0.2%	0.0%	0.1%	2.7%
$210,000 and above	2.6%	0.2%	0.2%	0.2%	0.1%	3.3%
Total	**43.5%**	9.2%	15.3%	**24.2%**	7.7%	100.0%

Note: distributions based upon 77% of surveyed households that responded to this question. Totals exclude Declined / Don't Know.

Table 4-6: Household Income by Household Size - % Distribution, 2011

Total Survey Area Residents

Household Income	1 person	2 persons	3 persons	4 persons	5 + persons	Total
$0 to $29,999	**9.0%**	3.7%	1.5%	0.7%	0.7%	15.7%
$30,000 to $59,999	**10.0%**	**8.2%**	2.8%	1.8%	1.4%	**24.2%**
$60,000 to $89,999	**5.9%**	**8.2%**	3.9%	3.0%	1.5%	**22.5%**
$90,000 to $119,999	2.4%	**6.4%**	3.6%	3.7%	1.7%	17.9%
$120,000 to $149,999	0.4%	3.1%	2.0%	2.6%	1.0%	9.0%
$150,000 to $179,999	0.2%	1.5%	1.1%	1.4%	0.5%	4.7%
$180,000 to $209,999	0.1%	0.6%	0.6%	1.0%	0.4%	2.7%
$210,000 and above	0.2%	0.9%	0.7%	1.0%	0.5%	3.3%
Total	**28.2%**	**32.6%**	16.3%	15.3%	7.7%	100.0%

Note: distributions based upon 77% of surveyed households that responded to this question. Totals exclude Declined / Don't Know.

Table 4-7: Household Income by Number of Household Vehicles - % Distribution, 2011

Total Survey Area Residents

Household Income	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles	Total
$0 to $29,999	**7.3%**	**6.9%**	1.3%	0.2%	0.1%	15.7%
$30,000 to $59,999	3.8%	**14.6%**	4.7%	0.8%	0.2%	**24.2%**
$60,000 to $89,999	1.8%	**11.8%**	**7.4%**	1.1%	0.3%	**22.5%**
$90,000 to $119,999	0.7%	**7.2%**	**8.1%**	1.5%	0.4%	17.9%
$120,000 to $149,999	0.2%	2.5%	5.1%	0.9%	0.3%	9.0%
$150,000 to $179,999	0.1%	1.1%	2.8%	0.5%	0.3%	4.7%
$180,000 to $209,999	0.1%	0.5%	1.6%	0.4%	0.1%	2.7%
$210,000 and above	0.0%	0.6%	1.8%	0.6%	0.2%	3.3%
Total	14.0%	**45.2%**	**32.8%**	6.0%	1.9%	100.0%

Note: distributions based upon 77% of surveyed households that responded to this question. Totals exclude Declined / Don't Know.

Finally, **Table 4-8** tabulates household size by household vehicles. **Table 4-9** indicates that among zero-vehicle households, the largest single category is one-person households (9.6% of all households, or 2/3 of zero-vehicle households). Three-quarters of one-vehicle households (33.4% of all households) are one- or two-person households, and 85% of two-vehicle households are two- or three to four-person households (28.0% of all households).

Table 4-8: Household Size by Household Vehicles, 2011

Ottawa Residents

Household Size	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles
1 person	38,600	64,000	4,000	500	400
2 persons	14,300	60,900	45,100	3,900	1,300
3 to 4 persons	5,300	37,800	57,600	13,400	3,300
5 to 6 persons	700	7,700	13,100	3,700	1,800
7 to 9 persons	100	700	1,100	400	100
10+ persons	-	100	-	-	-

Outaouais Residents

Household Size	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles
1 person	10,400	25,400	2,000	300	100
2 persons	2,700	20,100	19,800	1,400	200
3 to 4 persons	600	10,800	20,300	6,100	2,100
5 to 6 persons	100	1,700	3,900	1,100	700
7 to 9 persons	-	100	200	100	-
10+ persons	-	-	-	-	-

Total Survey Area Residents

Household Size	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles
1 person	48,900	89,300	6,000	800	400
2 persons	17,000	81,100	64,900	5,200	1,600
3 to 4 persons	6,000	48,600	77,900	19,400	5,400
5 to 6 persons	800	9,400	17,000	4,700	2,500
7 to 9 persons	100	900	1,300	500	100
10+ persons	-	100	100	-	-

Values may not add due to rounding.

Table 4-9: Household Size by Household Vehicles - % distribution, 2011

Household Size	0 vehicles	1 vehicle	2 vehicles	3 vehicles	4 + vehicles	Total
1 person	**9.6%**	**17.5%**	1.2%	0.2%	0.1%	28.5%
2 persons	3.3%	**15.9%**	**12.7%**	1.0%	0.3%	33.3%
3 to 4 persons	1.2%	9.5%	**15.3%**	3.8%	1.1%	30.8%
5 to 6 persons	0.2%	1.8%	3.3%	0.9%	0.5%	6.7%
7 to 9 persons	0.0%	0.2%	0.3%	0.1%	0.0%	0.6%
10+ persons	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	14.3%	45.0%	32.8%	6.0%	2.0%	100.0%

4.3 Occupational Status

Table 4-10 summarizes the occupational status of respondents. The table lists the primary status, for which full-time employment, full-time student and retiree constitute the large majority. Respondents were also asked if they had a secondary status; specifically, if they also were part-time employees or part-time students in addition to their primary status. Notably, 17% of students also have part-time employment; and 4% of full-time employees also are part time students, while 9% of part-time employees also are part-time students. Seven percent of retirees and 9% of homemakers also are employed or study part-time. Although these percentages are relatively small, they are important determinants in estimating the 'double commute' to both work and school. Combining all information, the expanded survey data show 661,600 people in the study area as employed (whether as their primary occupational status or as a secondary occupational status).

Table 4-10: Status, 2011

Ottawa Residents

Status Type	Primary Status	Secondary Status: PT Employment	Secondary Status: PT Student	Total Employed (Primary Status + Total Other PT Employed)	Total Students (Primary Status + Total Other PT Students)
Full time employment	(a) 387,700	-	15,300	(a) 387,700	
Part time employment	(b) 48,700	-	4,600	(b) + (d) 104,900	
Student (FT or PT)	(c) 210,500	44,400	-		(c) + (e) 235,000
Retiree	158,400	9,800	2,000		
Unemployed	22,400	-	1,500		
Homemaker	27,200	2,000	1,200		
Other	16,300	-	-		
Total	871,200	(d) 56,200	(e) 24,600	492,600	235,000

Outaouais Residents

Status Type	Primary Status	Secondary Status: PT Employment	Secondary Status: PT Student	Total Employed (Primary Status + Total Other PT Employed)	Total Students (Primary Status + Total Other PT Students)
Full time employment	(a) 139,800	-	7,100	(a) 139,800	
Part time employment	(b) 11,700	-	1,400	(b) + (d) 29,300	
Student (FT or PT)	(c) 66,400	14,100	-		(c) + (e) 75,800
Retiree	53,800	3,200	600		
Unemployed	7,000	-	200		
Homemaker	8,200	300	200		
Other	5,100	-	-		
Total	292,000	(d) 17,600	(e) 9,500	169,100	75,800

Total Survey Area Residents

Status Type	Primary Status	Secondary Status: PT Employment	Secondary Status: PT Student	Total Employed (Primary Status + Total Other PT Employed)	Total Students (Primary Status + Total Other PT Students)
Full time employment	(a) 527,500	-	22,400	(a) 527,500	
Part time employment	(b) 60,400	-	6,000	(b) + (d) 134,200	
Student (FT or PT)	(c) 276,800	58,500	-		(c) + (e) 310,800
Retiree	212,200	13,100	2,500		
Unemployed	29,400	-	1,700		
Homemaker	35,500	2,200	1,400		
Other	21,500	-	-		
Total	1,163,300	(d) 73,800	(e) 34,000	661,600	310,800

Values may not add due to rounding.

Table 4-11 tabulates the occupation type for all full time and part-time employees. Note that part-time employees include people whose primary occupation, as defined in **Table 4-10**, is not worker.

Table 4-11: Occupation Type, 2011

Ottawa Residents *

Occupation Type	Male	Female	Total	%
Management	21,700	16,600	38,300	8%
Business, Finance and Administrative	27,200	45,500	72,700	15%
Natural and Applied Science and Related Occupation	45,300	15,700	61,000	13%
Health	6,500	20,000	26,500	5%
Social Science, Education, Government Service and Religion	52,500	73,400	125,900	26%
Art, Culture, Recreation and Sport	8,800	10,200	19,000	4%
Sales and Service	50,000	49,500	99,500	21%
Trades, Transport and Equipment Operators and Related Occupation	30,800	3,400	34,200	7%
Primary Industry	3,900	800	4,700	1%
Processing, Manufacturing and Public Utilities	800	400	1,200	0%
Total	247,500	235,500	483,000	100%

Outaouais Residents *

Occupation Type	Male	Female	Total	%
Management	6,200	5,800	12,000	7%
Business, Finance and Administrative	11,400	17,900	29,300	18%
Natural and Applied Science and Related Occupation	9,900	3,400	13,300	8%
Health	1,500	6,500	8,000	5%
Social Science, Education, Government Service and Religion	18,500	26,400	44,900	27%
Art, Culture, Recreation and Sport	3,700	3,400	7,100	4%
Sales and Service	14,700	14,100	28,800	18%
Trades, Transport and Equipment Operators and Related Occupation	17,400	1,700	19,100	12%
Primary Industry	600	200	800	0%
Processing, Manufacturing and Public Utilities	1,100	100	1,200	1%
Total	85,000	79,500	164,500	100%

Total Survey Area Residents *

Occupation Type	Male	Female	Total	%
Management	27,800	22,300	50,100	8%
Business, Finance and Administrative	38,500	63,400	101,900	16%
Natural and Applied Science and Related Occupation	55,200	19,200	74,400	11%
Health	8,000	26,500	34,500	5%
Social Science, Education, Government Service and Religion	71,000	99,800	170,800	26%
Art, Culture, Recreation and Sport	12,500	13,600	26,100	4%
Sales and Service	64,700	63,600	128,300	20%
Trades, Transport and Equipment Operators and Related Occupation	48,200	5,000	53,200	8%
Primary Industry	4,500	900	5,400	1%
Processing, Manufacturing and Public Utilities	1,900	500	2,400	0%
Total	332,300	314,800	647,100	100%

Values may not add due to rounding.

* Figures do not include data from 684 records (representing approximately 14,400 persons in the population in the expanded data) for persons who are workers but either declined to respond to this question or provided insufficient information.

Although the labour force is almost evenly divided (51.4% male, 48.6% female), consistent with findings elsewhere in Canada, the occupation type is not evenly distributed. Males remain dominant in management; natural and applied science and related occupation; trades, transport and equipment operators and related occupations; primary industry; and processing, manufacturing and public utilities. Females are dominant in business, finance and administration; health; and social science, education, government service and religion. There is approximately equal participation in art, culture, recreation and sport, and sales and service.

4.4 Determinants of Travel

Table 4-12 summarizes the key demographic determinants of travel for the NCR, for the current and 2005, 1995 and 1986 survey years. These determinants are population, households, the employed population and vehicles: all of these reflect 'home-end' characteristics (i.e., where people live). The table also compares average household size, the average number of workers (employed population) per household, and the average number of vehicles per household.

Table 4-12: Key Survey Area Determinants

Ottawa Residents

Survey Year	Population	Households	Employed Population *	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011	922,000	379,800	436,300	508,100	2.43	1.15	1.34
2005	865,700	347,900	401,300	482,100	2.49	1.15	1.39
1995 **	712,500	273,200	352,900 ***	346,300	2.61	1.29	1.27
1986 **	606,600	228,100	310,100 ***	303,400	2.66	1.36	1.33

Outaouais Residents

Survey Year	Population	Households	Employed Population *	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011	311,700	130,200	151,500	191,200	2.39	1.16	1.47
2005	284,900	117,500	142,000	175,500	2.42	1.21	1.49
1995 **	243,000	93,000	125,100 ***	126,900	2.61	1.35	1.36
1986 **	200,200	70,300	97,300 ***	97,300	2.85	1.38	1.38

Total Survey Area Residents

Survey Year	Population	Households	Employed Population *	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011	1,233,800	510,000	587,800	699,200	2.42	1.15	1.37
2005	1,150,600	465,400	543,200	657,500	2.47	1.17	1.41
1995 **	955,500	366,200	478,000 ***	473,200	2.61	1.31	1.29
1986 **	806,900	298,500	407,500 ***	400,800	2.70	1.37	1.34

Values may not add due to rounding.

* 'Employed population' includes only those workers whose primary occupation is full time or part time employment for all years (for 2011, see **Table 4-10** and related discussion).

** Updated 1986 and 1995 population and household data provided by TRANS.

*** These variables are described in the respective databases as "labour force."

Table 4-13 indicates how these have changed over time. In the 25 year period between 1986 and 2011, population increased by 52.9% and households increased by 70.9% (almost 35% faster than the population) in the NCR, although growth was faster in the Outaouais than in Ottawa over this period. However, growth in the employed population has not kept pace (44.2%), although again Outaouais' employed population has grown faster than has that of Ottawa (55.7%, compared with 40.7%). Vehicle availability has grown faster than population and households (74.5%), and has almost doubled in the Outaouais (96.5%).

More recently, however, since 2005 the employed population has grown faster than population (8.2% versus 7.2%, respectively), and households have grown faster than both (9.6%). On the other hand, vehicle ownership has not kept pace (6.3%).

Table 4-13: Changes Over Time in Key Survey Area Determinants

Ottawa Residents

Survey Years	Population	Households	Employed Population	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011 - 2005	6.5%	9.2%	8.7%	5.4%	-2.4%	-0.4%	-3.5%
2005 - 1995	21.5%	27.3%	13.7%	39.2%	-4.6%	-10.7%	9.3%
1995 - 1986	17.5%	19.8%	13.8%	14.1%	-1.9%	-5.0%	-4.7%
2011 - 1986	52.0%	66.5%	40.7%	67.5%	-8.7%	-15.5%	0.6%

Outaouais Residents

Survey Years	Population	Households	Employed Population	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011 - 2005	9.4%	10.8%	6.7%	8.9%	-1.3%	-3.7%	-1.7%
2005 - 1995	17.2%	26.3%	13.5%	38.3%	-7.2%	-10.2%	9.5%
1995 - 1986	21.4%	32.3%	28.6%	30.4%	-8.2%	-2.8%	-1.4%
2011 - 1986	55.7%	85.2%	55.7%	96.5%	-15.9%	-15.9%	6.1%

Total Survey Area Residents

Survey Years	Population	Households	Employed Population	Vehicles	Persons / Household	Workers / Household	Vehicles / Household
2011 - 2005	7.2%	9.6%	8.2%	6.3%	-2.1%	-1.3%	-3.0%
2005 - 1995	20.4%	27.1%	13.6%	38.9%	-5.2%	-10.6%	9.3%
1995 - 1986	18.4%	22.7%	17.3%	18.1%	-3.5%	-4.4%	-3.8%
2011 - 1986	52.9%	70.9%	44.2%	74.5%	-10.5%	-15.6%	2.1%

Expressed as rates, the average household size has dropped 10.5% since 1986 (15.9% in the Outaouais) and 2.1% since 2005. The average number of workers per household dropped more significantly, at 15.6% since 1986 and 1.3% since 2005 (suggesting an apparent stabilization). Finally, whereas the average number of vehicles per household grew 2.1% since 1986 (6.1% in the Outaouais), since 2005 this average has dropped 3.0%.

Table 4-14 compares the employed population and employment (jobs). **Table 4-15** summarizes changes over time in these figures. Together, the tables show that there is a growing shortfall of working residents to fill jobs in the NCR, although it should be noted that the comparisons might not be comparing the same things (i.e., it is not clear whether the employment figures include part

time jobs or how a 'job' is defined); also, these data are from varying sources on each side of the river, and cover different years (including interpolations and forecasts between survey years).

Nevertheless, the comparisons suggest an apparent match of workers and jobs in 1986 and 1995. However, subsequently jobs have grown much more quickly than the 'supply' of the NCR's working population. Moreover, there are now many more workers in the Outaouais than there are jobs – note also that the Outaouais lost 20% of its jobs between 1986 and 1995, although between 1995 and 2005, the number of jobs in the Outaouais almost doubled. By comparison, there are many more jobs in Ottawa than there are workers living in Ottawa. Hence, Ottawa is a 'net importer' of workers and the Outaouais is a 'net exporter' of workers – i.e., the NCR largely functions as a single urban economy.

Nonetheless, jobs have grown much faster than has the employed population. The 2009 TRANS External Survey confirms that the commutershed extends beyond the NCR's boundaries.

Table 4-14: Comparison of Workers and Jobs

Year	Ottawa		Outaouais		Total Study Area (NCR)		Jobs Relative to Workers **
	Employed Population *	Employment	Employed Population *	Employment	Employed Population *	Employment	
2011	436,300	565,100	151,500	111,900	587,800	677,000	+15.2%
2005	401,300	514,100	142,000	102,700	543,200	616,700	+13.5%
1995	352,900	402,600	125,100	52,300	478,000	454,900	-4.8%
1986	310,100	343,200	97,300	66,100	407,500	409,300	+0.4%

Values may not add due to rounding.

* Employed population includes only those workers whose primary occupation is full-time or part-time employment.
** The percentage by which the number of jobs (employment) exceeds the number of workers (employed population).

Sources: Employed Population: from survey results;
Employment – Ottawa: 1986, 1996, 2001 and 2006 *Employment Surveys,* with refinements to estimates in 2001 and 2006 derived from building permits from 2001-2005 and 2006-2011, respectively.
Employment – Outaouais: 1986, 1995 *Labour Force Survey (LFS)* estimates; 2005 *Liste des industries et commerces (LIC)*, provided by Ville de Gatineau; 2007 *LIC* for Ville de Gatineau projected to 2010 provided by Emploi-Québec, with estimations for other municipalities in the survey area prepared by MTQ based on the 2006 Census, *LFS* 2005-2009, and property data from the Ministère des Affaires municipales, des Régions et de l'Occupation du territoire.

Table 4-15: Changes Over Time in Workers and Jobs

Survey Years	Ottawa		Outaouais		Total Study Area (NCR)	
	Employed Population *	Employment	Employed Population *	Employment	Employed Population *	Employment
2011 - 2005	8.7%	9.9%	6.7%	9.0%	8.2%	9.8%
2005 - 1995	13.7%	27.7%	13.5%	96.4%	13.6%	35.6%
1995 - 1986	13.8%	17.3%	28.6%	-20.9%	17.3%	11.1%
2011 – 1986	40.7%	64.7%	55.7%	69.3%	44.2%	65.4%

* Employed population includes only those workers whose primary occupation is full-time or part-time employment.

4.5 Key Travel Indicators

Note that all travel data presented in this section and in the rest of Section 4 include external trips – that is, trips made by NCR residents to and from locations outside the NCR. In contrast, the individual district tabulations in Section 5 do not include trips that are external to the NCR.

Table 4-16 summarizes key survey area travel indicators: daily person-trips, trips per person and trips per household, for 2011, 2005, 1995 and 1986. Note that the 2011 person-trip rates are shown for the population 11+, to ensure consistency with the rates that are presented for previous years. The total number of person trips, for all modes and all purposes, has increased steadily, to 2.91 million trips each day.

Table 4-17 shows how these indicators have changed over time. While total trips have increased by almost half over the past 25 years (35.2%) and by 3.7% since 2005, the average trip rate per person has dropped 4.9% since 1986 and by 3.2% since 2005. The average trip rate per household has dropped by 20.9% since 1986 and 5.4% since 2005. These reductions in person and household trip rates are consistent with NCR trends and with trends observed elsewhere in Canada (see **Table 3-1**). The reductions may be related to a variety of factors, such as smaller household sizes, a stabilization of vehicle availability rates and a generally aging population; further research is required to confirm and verify the causes.

Table 4-16: Key Survey Area Travel Indicators (daily)

Total Survey Area Residents

Survey Year	Total Trips	Trips / Person	Trips / Household
2011 5+	3,110,200	2.67*	6.10
2011 11+	2,909,000	2.69 **	5.70
2005	2,806,200	2.78	6.03
1995	2,485,100	3.00	6.79
1986	2,152,200	2.83	7.21

Values may not add due to rounding.

* Note that trips/person are tabulated only for the population 5+ (five years of age and older).

** Note that trips/persons are tabulated only for the population 11+ (11 years of age and older), to ensure consistency with the person-trip rate from previous surveys.

Table 4-17: Changes Over Time in Key Survey Area Travel Indicators (11 + years)

Total Survey Area Residents

Years Under Comparison	% Δ Total Trips	Δ Trips / Person	Δ Trips / Household
2011 11+ - 2005	3.7%	-3.2%	-5.4%
2005 - 1995	12.9%	-7.3%	-11.1%
1995 - 1986	15.5%	6.0%	-5.9%
2011 11+ - 1986	35.2%	-4.9%	-20.9%

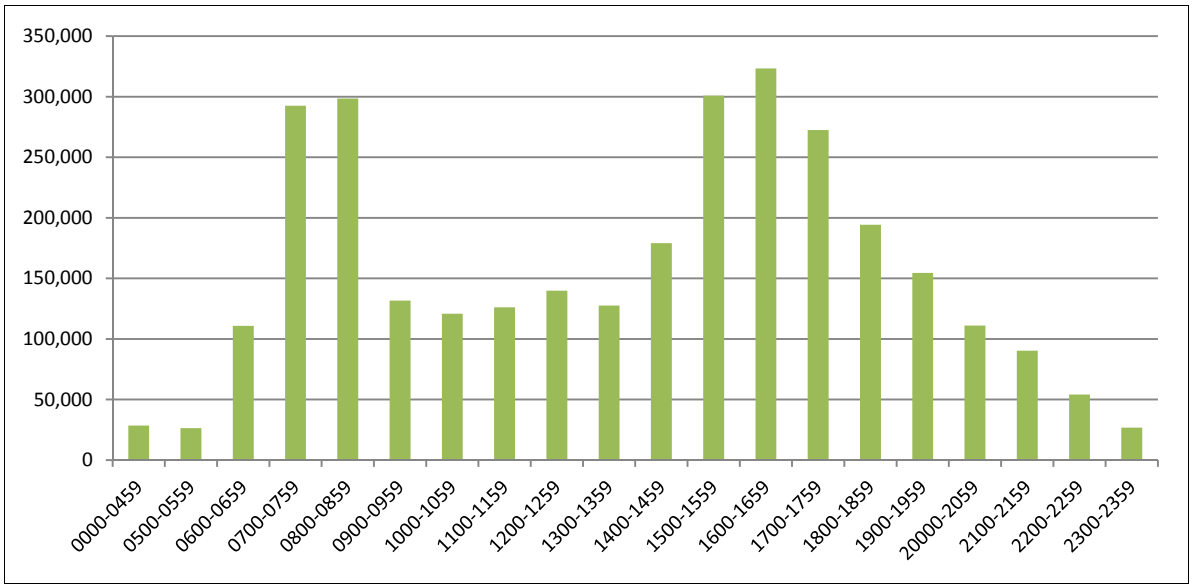
4.6 Travel by Time of Day

Figure 4-2 shows the distribution of total person-trips by hour of day, as determined by the start time of the trip. This figure shows the trips made by the total surveyed population 5+ years. The 2.5-hour peak periods continue to represent the peak times of travel – as seen below, combined, the two periods represent almost half (45%) of daily trip making.

More people travelled during the PM peak period than during the AM peak period. A total of 658,300 trips were made during the AM peak period (0630 - 0859), and 749,500 trips were made during the PM peak period (1530 – 1759). Proportionately, these represent 21% and 24%, respectively, of total daily travel.

The hours with the greatest volumes occur during the commuter peaks: the hour starting at 16:00, with 323,400 person-trips (10.4% of the daily total), followed by the hour starting at 15:00 and 08:00, with 300,900 person-trips (9.7% of the daily total) and 298,600 person-trips (9.6% of the daily total), respectively.

Figure 4-2: Travel by Time of Day – 2011 (Population 5+ Years)



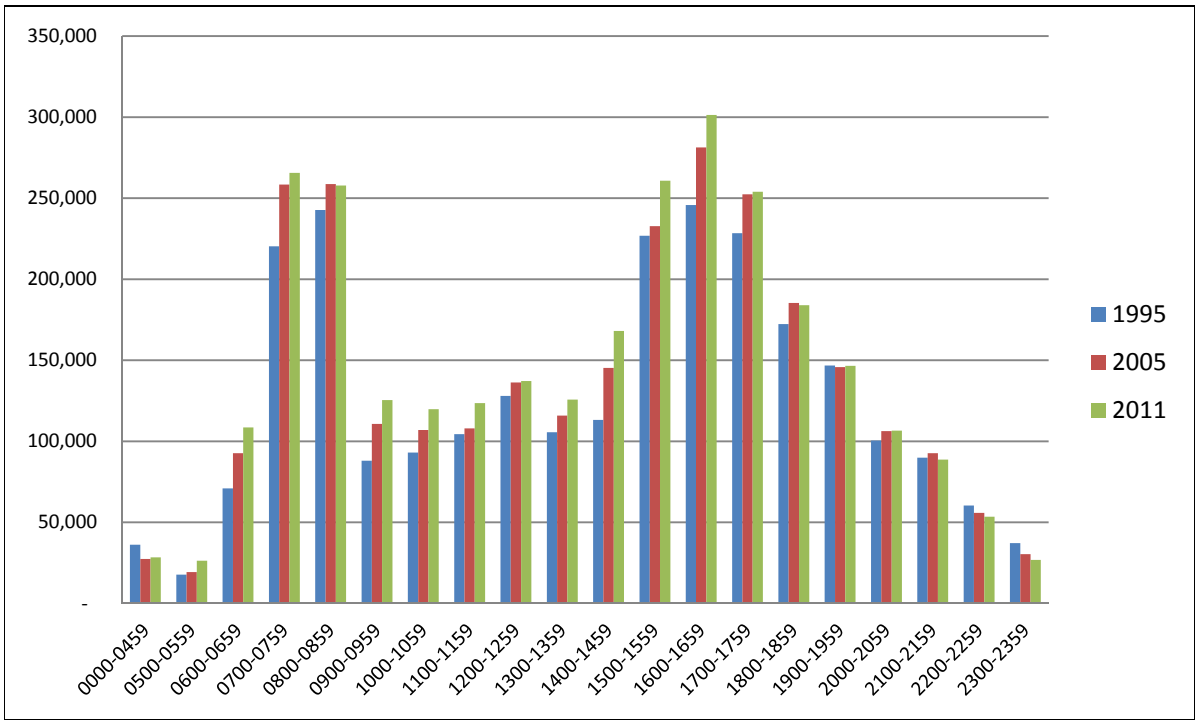
2011 results for all travellers 5+ years of age.

Note: left-most bar combines travel from midnight (00:00) to 04:59. Travel in all other bars is for a single hour only.

Figure 4-3 compares the distribution of trips for 2011, 2005 and 1995. (In order to ensure comparability, the 2011 trips for this figure include only those trips made by the population 11 years of age and older). It can be seen that the same general profile of trips by time of day has been maintained. However, the absolute volumes are increasing. The AM peak period is characterized by a modest overall increase, tempered somewhat by a very slight reduction in the hour beginning at 8:00. Inversely, the AM peak shoulders (6:00 and 9:00) are increasing, suggesting a possible trend towards its widening. The interpeak and PM peak periods show the most dramatic increases, with fully 70,900 additional trips, since 2005, across the three hours starting from 14:00

(with increases in volume ranging between 20,100 and 28,000 per hour). Of note, this brings mid-afternoon volumes in the hours starting at 14:00 to the point that they now approximate early evening volumes (e.g., volumes in the hour beginning at 14:00 are starting to approach those in the hour beginning at 18:00). Interestingly, the volume of trips in the hour beginning at 17:00 is almost identical to that in 2005. Late evening and night-time volumes are stable, with slight reductions recorded for certain hours. The growth in the pre- and post-PM peak period is in line with that observed elsewhere in Canada (e.g., Toronto and Vancouver). The increase in inter-peak travel is also consistent with travel elsewhere.

Figure 4-3: Travel by Time of Day – 2011, 2005 and 1995 (Population 11+ Years Only)



2011 results filtered to trips made by the population 11+ years of age, for comparison with previous survey cycles.

Note: left-most bar combines travel from midnight (00:00) to 04:59. Travel in all other bars is for a single hour only.

Figure 4-4 summarizes the observed modal share for trips starting at different periods of the day. These are:

- AM peak period (0630 – 0859);
- Mid-day inter-peak (0900 – 1529);
- PM peak period (1530 – 1759);
- Evening / night-time ("off-peak", 1800 – 0629); and
- 24 hour (which is the sum of the other four time periods).

The mode shares are shown side-by-side for the 5+ and 11+ populations. In the pie charts, 'Other' includes modes such as school bus, taxi, paratransit, motorcycle/scooter and other atypical modes, such as VIA Rail and airplane.

The patterns are generally the same for both groups, with the auto passenger, other (mainly school bus) and – for the AM and PM peak periods – walk shares being slightly higher for the 5+ population. The walk share is slightly higher for the 11+ population during the evening / night-time.

The auto driver mode dominates at all time periods. For the 5+ population, the auto driver share ranges from 48% during the AM peak period to 59% in the evening / night-time (55% daily). For the 11+ population, the auto driver share follows the same profile, but with higher shares: from 54% in the AM peak period to 61% in the evening / night-time, and 58% daily.

The auto passenger share is next highest, especially during the PM peak period (16% for 5+ and 12% for 11+) and the evening / night-time (22% and 19%, respectively). Daily shares are 15% for 5+ and 13% for 11+.

The transit share is highest during the two peak periods (especially the AM), followed by the mid-day inter-peak period. AM transit shares are 18% for 5+ and 20% for 11+. PM transit shares are 14% for 5+ and 16% for 11+. The mid-day transit shares are 11% for 5+ and 12% for 11+, and the evening / night-time shares are 9% for both populations. Overall, the 24-hour transit shares are 13% for 5+ and 14% for 11+.

The bicycle share is consistent at 2% for both groups, and for all time periods except the evening / night-time, when it is 1% for both groups. The 24-hour bicycling shares are 2%.

The walk share is highest during the mid-day inter-peak period, at 13% for both groups, followed by the PM peak period (10% for 5+ and 9% for 11+) and AM peak period (9% and 8%, respectively). The evening / night-time walk shares are 8% and 9%, respectively, with overall daily walk shares being 10% for both groups.

Proportionally, the greatest differences between the two groups occur with the 'other' shares, most likely because other includes school bus trips. For the AM peak period, the other shares are 10% (5+) and 6% (11+). For the PM peak period, the other shares are 4% and 2%, respectively. For the mid-day inter-peak, the other shares are 5% and 3%, respectively (the same values as for the daily shares). During the evening / night-time, the other share is 1% for both groups.

Figure 4-5 shows the distribution of auto driver, auto passenger and transit trips by time period. It can be seen that trips for each mode are well distributed throughout the day. Most auto driver and auto passenger trips take place outside the two commuter peaks, at 57% and 58% (for those 5+), or 57% and 64% (for those 11+), respectively (compared with 58% and 61%, respectively, for those 11+ in 2005).

Most transit trips take place during the two commuter peaks, at 56% of all transit trips (compared with 60% in 2005). The respective values are 32%, 25% and 28% during the mid-day inter-peak, and 25%, 33% (i.e., one third of auto passenger trips occur in the evening / night-time) and 16% (i.e., the lowest portion for transit) during the off-peak period.

Figure 4-4: Modal Share by Time of Day, 2011

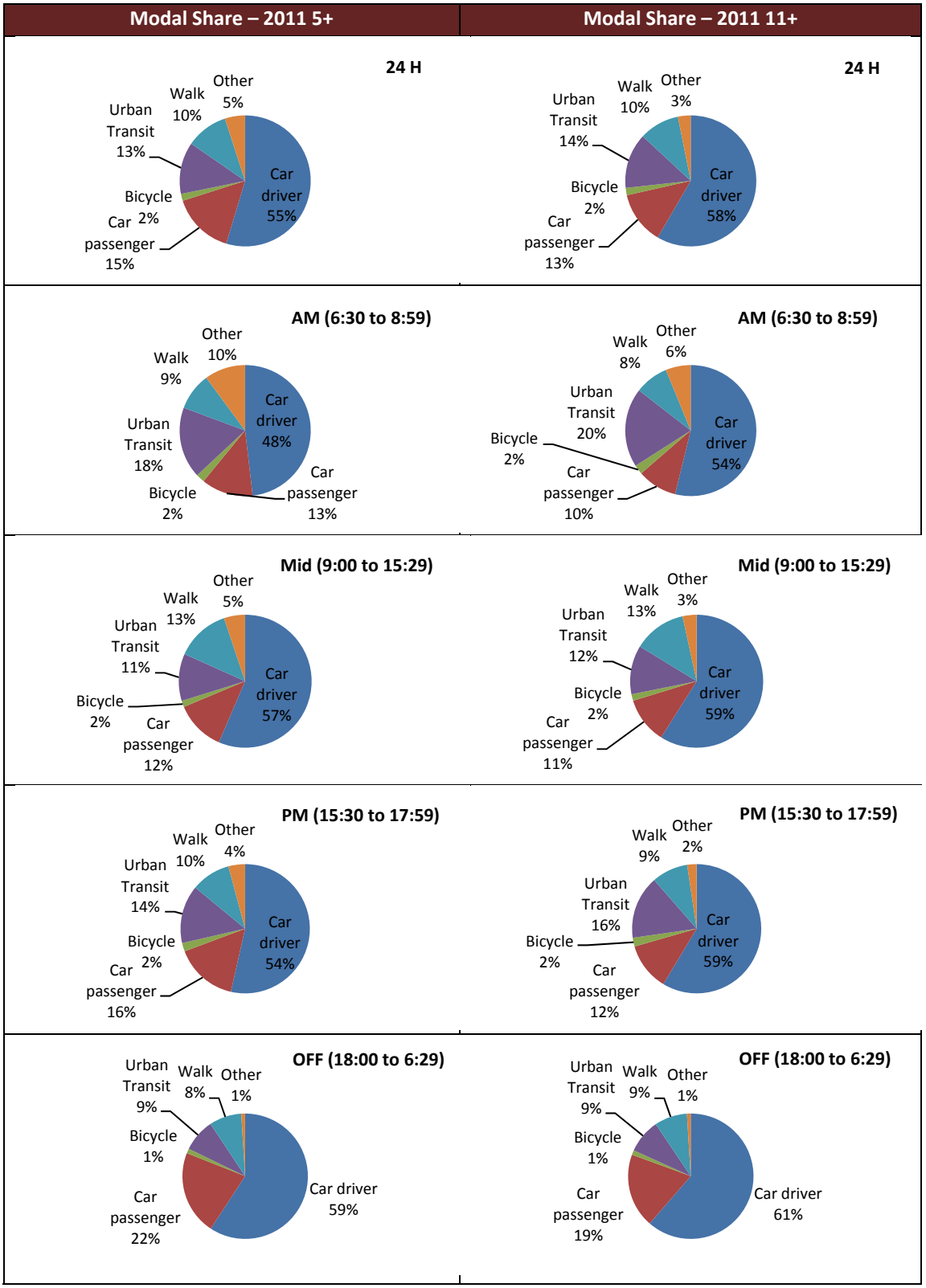


Figure 4-5: Distribution of Auto and Transit Person-Trips by Time of Day, 2011

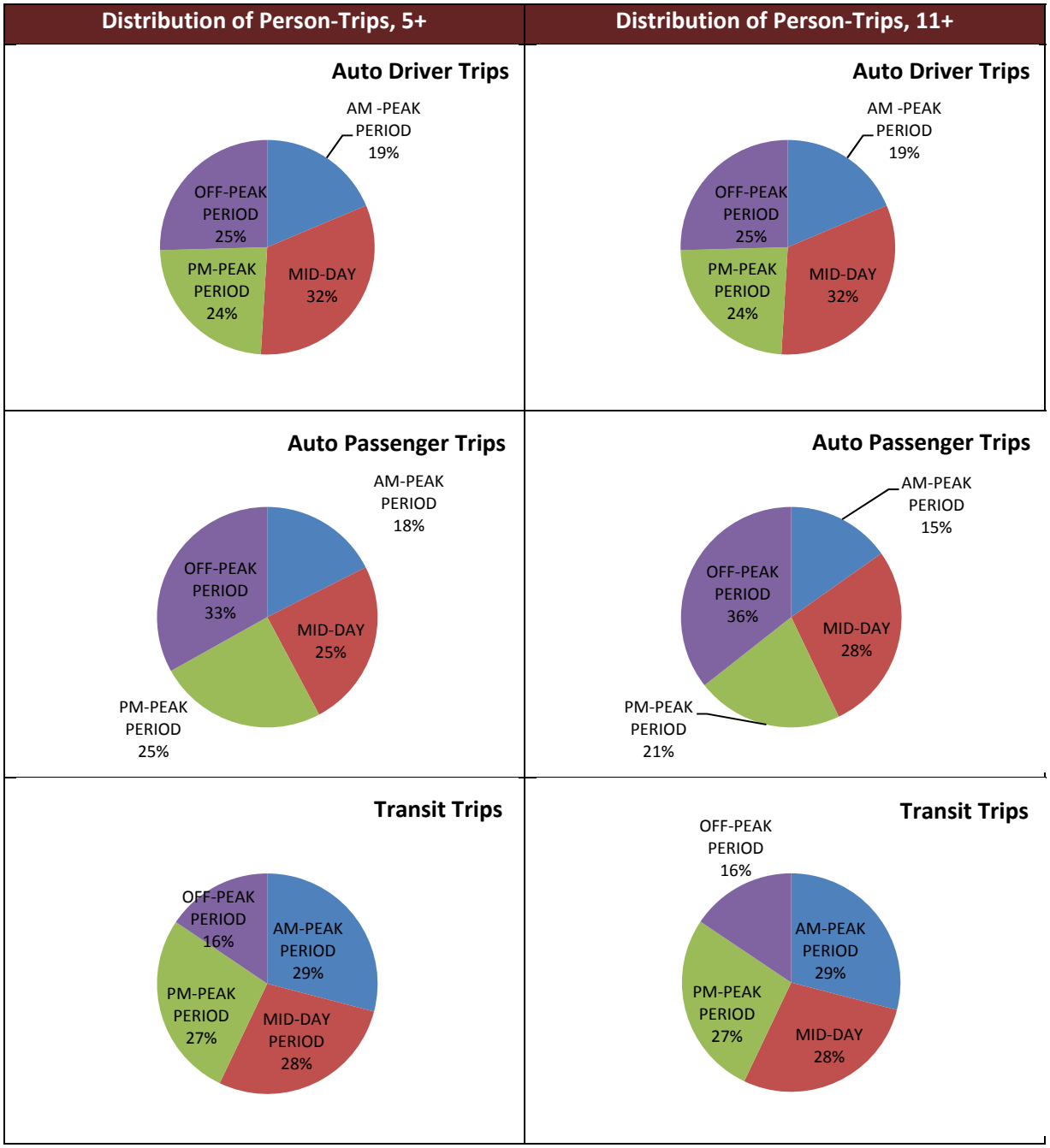
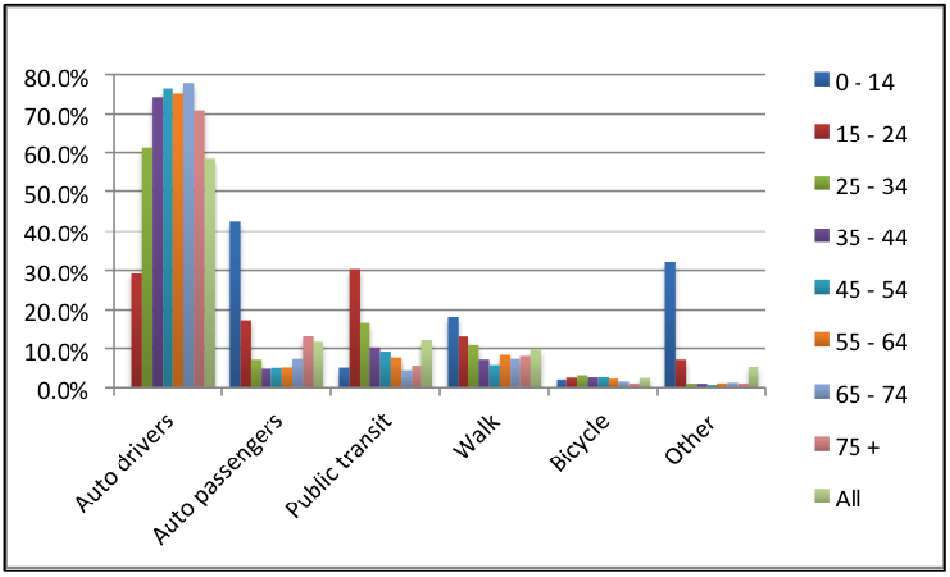
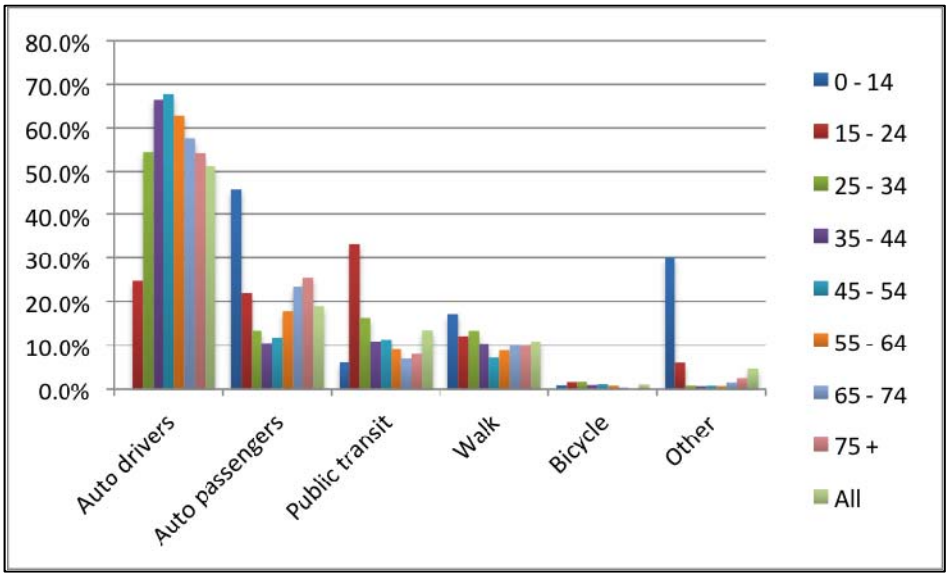


Figure 4-6 presents daily mode share by age group by gender. It can be seen that the general mode share profiles – including the dominance of the auto mode for all age groups (of driving-age) – is similar for both genders. However, the magnitudes differ, with the female auto driver shares consistently lower than the male shares across all age groups. The auto driver share also peaks for males in the 65-74 age group, whereas for female it peaks in the 45-54 age group. On the other hand, the female transit and (especially) auto passenger shares are generally higher across the age groups than the corresponding male shares. Cycling is higher for males, as is walking for younger age groups. Note that 'other,' which is strongest for the 0-14 and 15-24 age groups, is primarily school bus.

Figure 4-6: Use of Modes by Age Group by Gender (daily), 2011



Male Shares

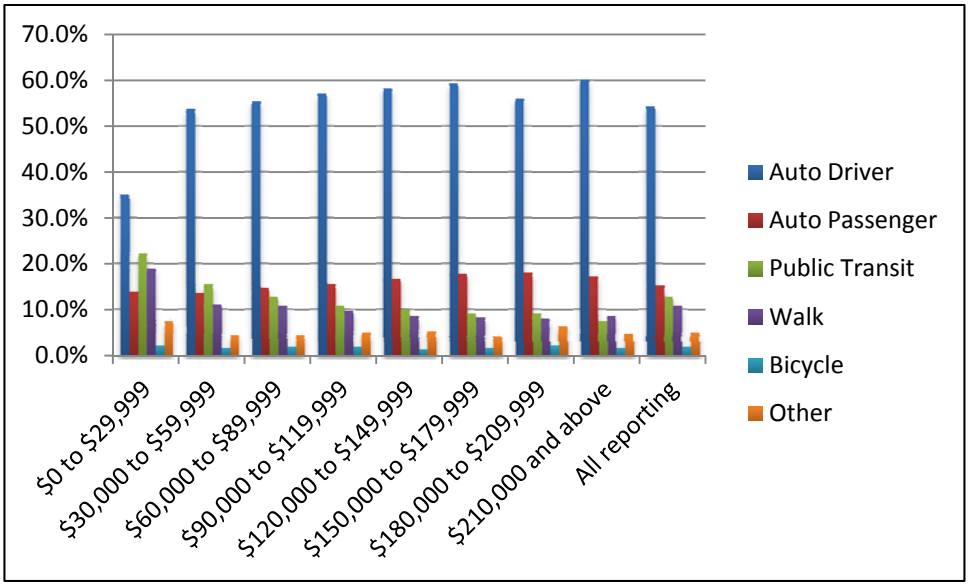


Female Shares

Figure 4-7 plots daily mode share by household income category. The auto driver share is highest for all modes in each income category: its share is lowest for the $0 - $29,999 income category, which also has the most zero-vehicle households. Transit and walk shares are also highest for this income category.

However, auto driver shares are reasonably stable for all other income categories, generally rising slightly with income (with the exception of the $180,000 - $209,999 category, which experiences a slight drop). The auto passenger share rises gradually through all income categories, although it drops slightly in the highest group ($210,000 +). The transit share drops gradually as income increases, as does the walk share. Cycling is reasonably steady, but marginal, across all groups, dropping slightly before increasing slightly in the highest group ($210,000 +). Finally, the other share (e.g., school bus, minibus and taxi) is highest in the lowest and highest income groups.

Figure 4-7: Use of Modes by Income Level (daily), 2011



Note: distributions based upon 77% of households that responded to income question.

4.7 Travel by Mode

Table 4-18 breaks down the daily modal splits between auto and transit use.[11] The usage for 2011 is shown for all surveyed age groups (5 years and older) and, to allow comparison with previous surveys, also for those 11 years and older. The difference is important, because the transit split is about the same (and the transit share is slightly lower) with the younger group included than it is for the 11+ group.

[11] Note that the calculation includes only auto drivers, auto passengers and transit passengers. 'Other' modes (school bus, taxi, motorcycle) are not included in this calculation.

When compared with 2005, the 2011 11+ transit split shows an increase of the order of 0.6%, and the transit share increases by 0.7%. This is consistent with transit ridership growth, as estimated by the City of Ottawa and the STO.

Table 4-18: Breakdown by Modal Use (daily)

Ottawa Residents

Survey Year	Auto Person Trips				Transit Trips			% Non-motorized
	Driver	Passenger	Total	Auto Occupancy	Person	Modal Split	Modal Share	
2011 5+	1,273,100	366,100	1,639,200	1.29	326,500	16.6%	13.6%	13.2%
2011 11+	1,273,100	292,800	1,565,900	1.23	324,100	17.2%	14.4%	12.9%
2005 *	1,213,700	286,600	1,500,300	1.24	301,900	16.8%	14.0%	13.0%
1995 *	1,053,400	291,400	1,344,800	1.28	223,200	14.2%	11.9%	13.4%
1986 *	939,600	267,300	1,206,900	1.28	307,100	20.3%	18.0%	8.5%

Outaouais Residents

Survey Year	Auto Person Trips				Transit Trips			% Non-motorized
	Driver	Passenger	Total	Auto Occupancy	Person	Modal Split	Modal Share	
2011 5+	427,000	113,400	540,400	1.27	72,000	11.76%	10.17%	8.34%
2011 11+	427,000	86,900	513,900	1.20	71,600	12.23%	10.83%	7.71%
2005 *	410,000	87,800	497,800	1.21	61,000	10.9%	9.4%	8.7%
1995 *	382,700	105,300	488,000	1.28	36,800	7.0%	6.0%	10.1%
1986 *	278,500	72,900	351,400	1.26	46,900	11.8%	10.5%	6.3%

Total Survey Area Residents

Survey Year	Auto Person Trips				Transit Trips			% Non-motorized
	Driver	Passenger	Total	Auto Occupancy	Person	Modal Split	Modal Share	
2011 5+	1,700,100	479,600	2,179,700	1.28	398,500	15.5%	12.8%	12.1%
2011 11+	1,700,100	379,700	2,079,800	1.22	395,700	16.0%	13.6%	11.8%
2005	1,623,700	374,400	1,998,100	1.23	362,900	15.4%	12.9%	12.0%
1995	1,436,100	396,800	1,832,900	1.28	260,100	12.4%	10.5%	12.6%
1986	1,218,000	340,200	1,558,200	1.28	354,000	18.5%	16.4%	8.1%

Values may not add due to rounding.

* Breakdowns for Ottawa and Outaouais for 1986, 1995 and 2005 were calculated by TRANS.

Figure 4-8 shows how the use of sustainable transportation modes – the transit modal split, the transit modal share and non-motorized modes (cycling and walking combined) – have changed. It can be seen that, after a drop between 1986 and 1995, the transit split and transit shares have increased and – as noted - are now showing a 0.6% - 0.7% increase for the 2011 11+ age group. The non-motorized shares have dropped slightly since 2005, continuing a reduction since 1995. The low non-motorized share in 1986 may reflect the 'passive' survey instrument (mailback) and the greater diligence placed in subsequent computer-aided telephone surveys to capture non-motorized trips. Consequently, the 1986 transit modal shares and splits may not be directly comparable with subsequent surveys.

Figure 4-8: Changes in Use of Sustainable Transportation Modes (daily)

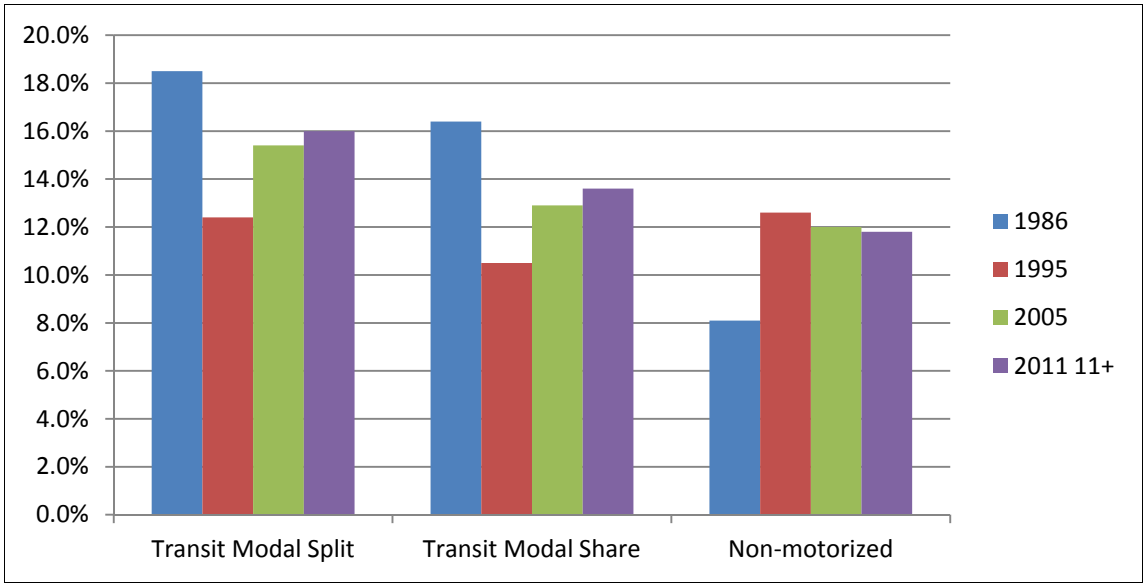


Table 4-19 quantifies motorized use changes over time. Total daily auto person trips increased by 33.5% between 1986 and 2011 – slightly faster than the 29.5% increase in total daily trips made by the all motorized modes. This also reflects the dominant role of the auto mode in daily travel.

Auto driver trips increased even faster, by 39.6% whereas auto passenger increase only by 11.6% over the same interval. This is evidenced by the reduction in the passenger share of total auto trips, with the 1986 average auto occupancy rate of 1.28 person per vehicle (ppv) dropping to 1.22 ppv in 2011.

Transit trips decreased by 26% between 1986 and 1995, but increased by 40% between 1995 and 2005. Overall, 2011 transit person trips were 11.8% higher than those of 1986.

More recently, since 2005 auto driver trips have increased by 4.7%, auto passenger trips by 1.4% and transit by 9.0%, which represents more than double the growth rate for auto travel.

Bicycle's share also has increased, to 1.8% from 1.4% in 2005, although the share of walk trips has dropped to 10.0% from 10.6% in 2005.

Table 4-19: Changes Over Time in Modal Use – Motorized Trips (daily)

Total Survey Area Residents

Comparison	Change in Total Motorized Trips	Change in Auto Driver Trips	Change in Auto Passenger Trips	Change in Total Auto Trips	Change in Transit Trips
2011 11+ - 2005	4.8%	4.7%	1.4%	4.1%	9.0%
2005 – 1995	12.8%	13.1%	-5.6%	9.0%	39.5%
1995 – 1986	9.5%	17.9%	16.6%	17.6%	-26.5%
2011 11+ - 1986	29.5%	39.6%	11.6%	33.5%	11.8%

Finally, **Table 4-20** documents the growth in daily bicycle and walk trips. Walk trips have effectively doubled since 1986, although they have dropped slightly since 2005 to 289,900 daily trips. Bicycle trips have almost doubled since 1986, and have increased by 40% since 2005.

Table 4-20: Growth in Bicycle and Walk Trips (daily)

Ottawa Residents

Survey Year	Bicycle	Walk	Total Non-motorized
2011 11+	42,900	248,000	290,900
2005	30,300	249,400	279,700
1995	26,900	224,400	251,300
1986	23,300	122,600	145,900

Outaouais Residents

Survey Year	Bicycle	Walk	Total Non-motorized
2011 11+	9,100	41,900	51,000
2005	6,900	49,100	56,000
1995	6,100	55,800	61,900
1986	4,200	23,800	28,000

Total Study Area Residents

Survey Year	Bicycle	Walk	Total Non-motorized
2011 11+	52,000	289,900	341,900
2005	37,100	298,600	335,700
1995	33,000	280,300	313,300
1986	27,500	146,400	173,900

Values may not add due to rounding.

4.8 Travel by Purpose

Table 4-21 breaks down trip purpose by time of day, for 2011 11+, 2005 and 1995. While the numbers of trip for each purpose generally have grown over time, their relative distribution within each time period has not changed significantly. Key points to note are:

- In 2011, with respect to trip purpose, over the 24-hour period the return home category dominates, at 41% of all trips. Work or related trips dominate in the AM peak period, at 55% of all trips. The return home category dominates in the PM peak period, at 64%.
- The proportion of work or related and school trips – that is, non-discretionary commutes – varies by time of day. During the AM peak period, these comprise 76% of all trips – 55% work and 21% school. During the PM peak period, these comprise 3% and 1%, respectively. Over the 24-hour period, these comprise ¼ of all trips, at 19% and 6%, respectively.
- Discretionary trips, such as shopping and personal and other, represent 28% of trips over the 24-hour period. Pick-up and drop-off represent 7% of all daily trips.
- The proportions by purpose have changed marginally among 1995, 2005 and 2011 11+. However, in absolute terms, work and – especially – school trips have dropped: the reason for this is unclear; however, it could reflect a better capture of interim stops along the daily commute to work and school.

- The total number of daily trips increased 4% from 2005 to 2011, with only a 1% growth in the AM peak period and a 4% growth in the PM peak period.

Table 4-22 on the following page breaks down 2011 daily trip purpose by place of residence, for all travellers 5+: it can be seen that there is globally very little difference between Ottawa and the Outaouais.

Table 4-21: Trip Purpose Type by Time of Day and by Year

Trip Purpose Type	1995		2005		2011 11+		Change from 1995 to 2011 11+		Change from 1995 to 2005 11+		Change from 2005 to 2011 11+	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
24 Hours												
Work or related	460,100	18%	541,800	19%	540,100	19%	80,000	17%	81,700	18%	(1,700)	0%
School	175,700	7%	189,400	7%	167,000	6%	(8,700)	-5%	13,700	8%	(22,400)	-12%
Shopping	275,400	11%	277,400	10%	350,000	12%	74,600	27%	2,000	1%	72,600	26%
Pick up / drop off	176,100	7%	180,900	6%	213,400	7%	37,300	21%	4,800	3%	32,500	18%
Personal and other	439,800	17%	449,900	16%	458,400	16%	18,600	4%	10,100	2%	8,500	2%
Return home	1,000,900	40%	1,166,700	42%	1,180,100	41%	179,200	18%	165,800	17%	13,400	1%
Total	2,528,000	100%	2,806,100	100%	2,909,000	100%	381,000	15%	278,100	11%	102,900	4%
AM Peak Period (0630 – 0859)												
Work or related	272,400	53%	319,600	55%	322,600	55%	50,200	18%	47,200	17%	3,000	1%
School	126,900	25%	139,300	24%	120,900	21%	(6,000)	-5%	12,400	10%	(18,400)	-13%
Shopping	5,600	1%	7,300	1%	11,600	2%	6,000	107%	1,700	30%	4,300	59%
Pick up / drop off	50,500	10%	53,900	9%	60,900	10%	10,400	21%	3,400	7%	7,000	13%
Personal and other	38,600	8%	39,100	4%	45,600	8%	7,000	18%	500	1%	6,500	17%
Return home	16,500	3%	21,300	7%	27,000	5%	10,500	64%	4,800	29%	5,700	27%
Total	510,500	100%	580,500	100%	588,600	100%	78,100	15%	70,000	14%	8,100	1%
PM Peak Period (1530 – 1759)												
Work or related	24,200	4%	21,800	3%	19,700	3%	(4,500)	-19%	(2,400)	-10%	(2,100)	-10%
School	4,800	1%	5,600	1%	5,900	1%	1,100	23%	800	17%	300	5%
Shopping	53,300	9%	55,900	9%	72,000	11%	18,700	35%	2,600	5%	16,100	29%
Pick up / drop off	46,900	8%	50,000	8%	62,000	9%	15,100	32%	3,100	7%	12,000	24%
Personal and other	90,400	15%	83,600	13%	89,100	13%	(1,300)	-1%	(6,800)	-8%	5,500	7%
Return home	368,400	63%	438,100	67%	435,700	64%	67,300	18%	69,700	19%	(2,400)	-1%
Total	588,000	100%	655,000	100%	684,400	100%	96,400	16%	67,000	11%	29,400	4%

Note: 1995 and 2005 figures are for travellers 11+ years of age. Accordingly, for comparability 2011 figures are for all travellers 11+ years of age.
Values may not add due to rounding.

* Some trip purposes are amalgamated in this table. *Work or related* comprises getting to work, work-related, working on the road; *School* comprises school; *Shopping* comprises shopping; *Pick up / Drop off* comprises driving someone to a destination and picking someone up; *Personal and other* comprises restaurant, recreation, visiting friends and family, health and personal care, and other; and *Return home* comprises return home.

Table 4-22: Trip Purpose by Individual Response Category (daily), 2011 5+

Trip Purpose Category	2011 5+					
	Number of trips *			% of Total *		
	Ottawa	Outaouais	Total Study	Ottawa	Outaouais	Total Study
Getting to work (usual place of work)	326,100	112,800	438,900	14%	16%	14%
Work – related (other than usual place of work)	64,500	18,000	82,500	3%	3%	3%
Working on the road	13,900	5,100	19,000	1%	1%	1%
School	178,500	57,300	235,800	7%	8%	8%
Shopping and household maintenance	287,100	69,800	356,900	12%	10%	11%
Restaurant	61,500	12,400	74,000	3%	2%	2%
Recreation	116,200	31,000	147,300	5%	4%	5%
Visiting friends / family	60,200	18,100	78,300	3%	3%	3%
Health and personal care	52,100	12,200	64,300	2%	2%	2%
Driving someone	84,300	27,500	111,800	4%	4%	4%
Picking someone up	77,700	27,300	105,000	3%	4%	3%
Returning home	973,900	296,600	1,270,500	41%	42%	41%
Other	105,800	20,200	126,000	4%	3%	4%
TOTAL	2,401,800	708,300	3,110,300	100%	100%	100%

Values may not add due to rounding. Includes all trips made by travellers 5+ years.

* By trip-maker's place of residence.

4.9 Trip Distance

Figure 4-9 shows the distribution of all daily trips for all purposes, by mode by distance. All trips up to 40 kilometres long are included, and are shown in 1-kilometre increments.[12] **Figure 4-10** presents cumulative distance by mode, over the same 40-kilometre range. **Table 4-23** summarizes the average trip distance by mode. The table also lists the most frequently occurring trip distances for each mode and the 1-kilometre interval by which 50% of the trips have occurred.

Table 4-23: Characteristics of Trip Distance

Mode	Average Trip Distance	Most Frequent 1-km Interval	Interval by Which 50% of Trips Occur
Auto Driver	10.7 km	2-3 km	7-8 km
Auto Passenger	9.1 km	2-3 km	5-6 km
Bicycle	5.1 km	1-2 km	3-4 km
Transit	13.4 km	5-6 km	11-12 km
Walk (entire trip)	1.3 km	0-1 km	1-2 km
Other *	7.7 km	2-3 km	4-5 km

* Includes taxi, motorcycle / scooter, school bus, other bus and minibus, paratransit, VIA Rail train, airplane, ferry and other.

On average, transit trips are longer than any other mode, including auto driver and auto passenger (25% and 47% longer, respectively). The average walk trip is shortest, at 1.3 kilometres. The average bicycle trip is less than half as long as the average auto driver trip (47%) and about 3/8 as long as the average transit trip (38%).

The most frequent (peak) intervals are much shorter, ranging from 0-1 km for walk to 1-2 km for bicycles, 2-3 km for auto driver / passenger and 5-6 km for transit. These are consistent with earlier 'peaks' developed for the 2003 Ottawa Transportation Master Plan, using the 1995 OD survey.[13] On the other hand, the intervals by which half the trips have occurred for each mode are closer to the average trip lengths, with auto passenger and bicycle being somewhat less (i.e., tighter ranges).

Note that the distances were calculated from the 'real' TRANS model network for each mode:[14]

- Auto driver / auto passenger: use congested assignment distances as reasonable proxy for daily travel (relatively few trips will take place during the free-flow night times).
- Transit trips: use transit assignment distances.
- Bicycle and walk: use free-flow auto assignment distances; i.e., generally cycle and walk paths are uncongested, so people will take the most direct route.

[12] 40 kilometres represents a reasonable inclusion of trips in the NCR, covering 98.0% of auto driver trips, 98.5% of transit trips, 98.7% of auto passenger trips, 99.9% of cycling trips and 100% of walk trips.

[13] *Strategic Analysis of Travel Demand*, City of Ottawa, July 2003. This analysis covered only trips originating in Ottawa.

[14] Note that there is a slight approximation in the calculation of zone-to-zone trip distances, attributable to the depiction of TAZs in the model network through their centroids (i.e., each zone's areas is represented by a single point). The centroid is connected to the model network via a TAZ, whose distance varies according to the geography and the location of the connection point on the network. On the other hand, the use of 'straight line' distance between each geocoded point and/or the use of the same distances for each mode would have introduced more significant and unrealistic distortions in the values (e.g., due to significant number of trips that cross one or more of the NCR's rivers, or which cross the Greenbelt; and also recognizing that the transit path between an origin and destination is not the same as the auto path).

Figure 4-9: Number of Trips by Distance (kilometre) by Mode (daily), 2011

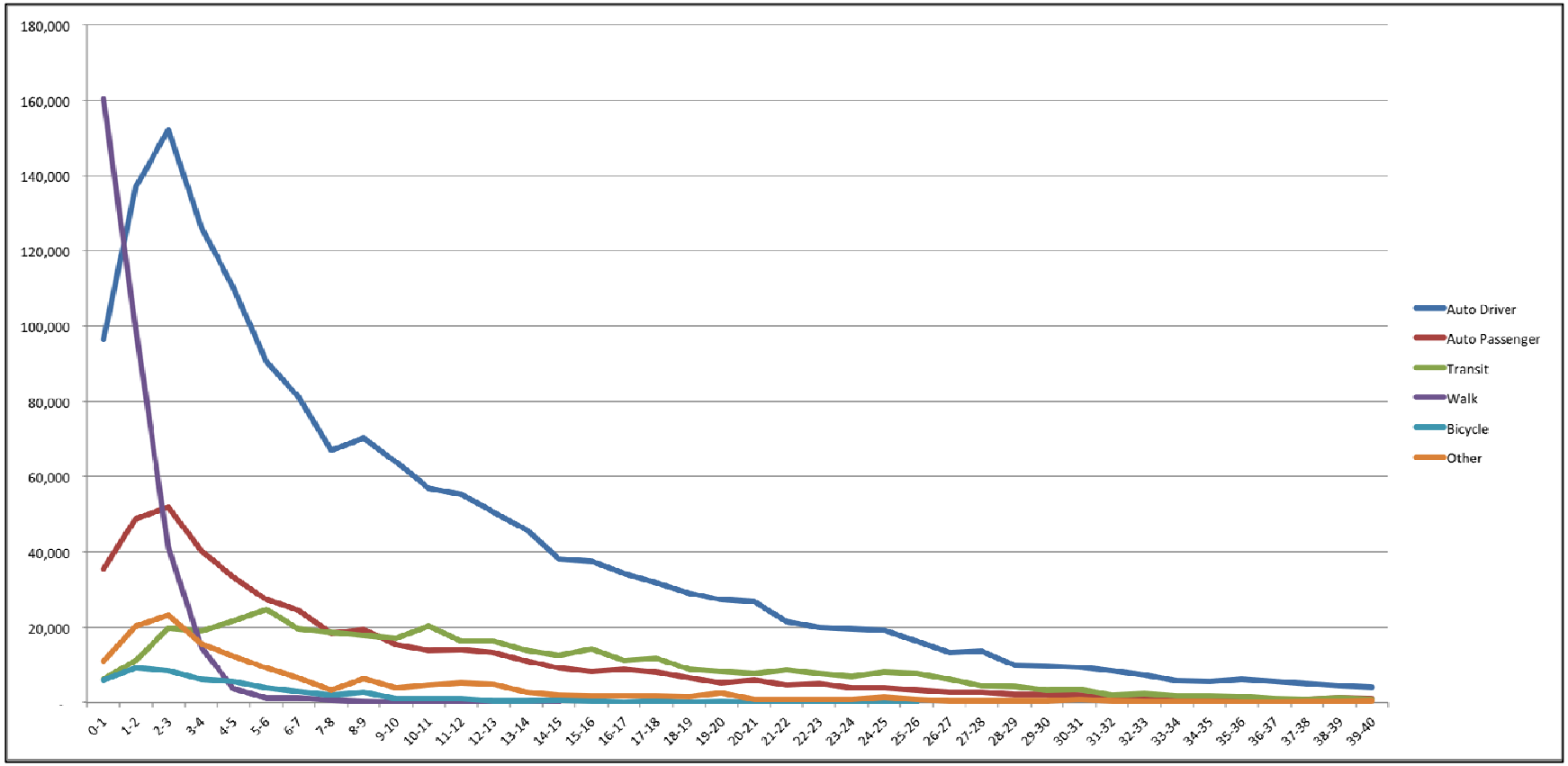
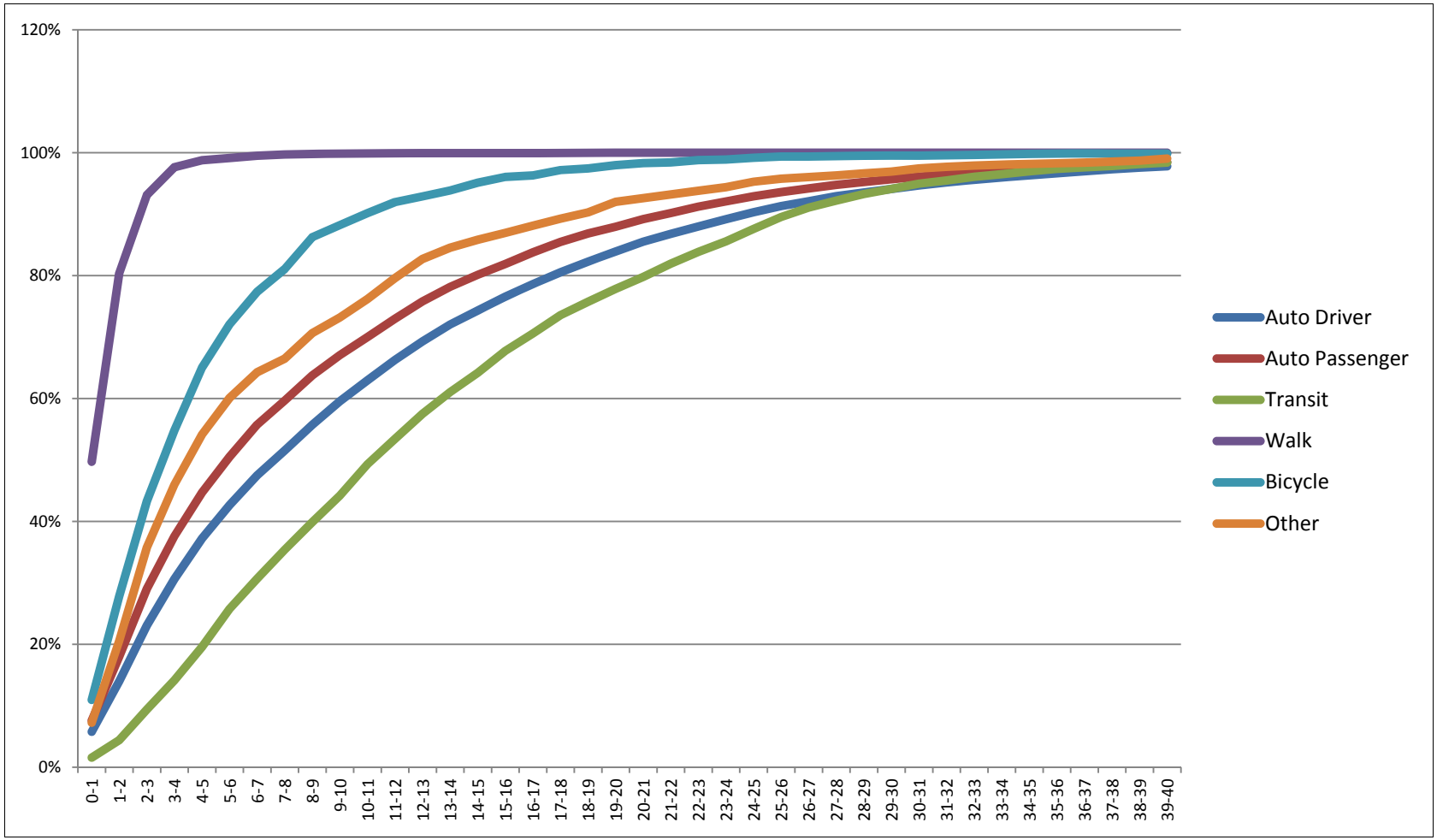


Figure 4-10: Cumulative Distance (kilometre) by Mode (daily), 2011



4.10 Trip Duration

Figure 4-11 shows the distribution of all trips for which duration is known, by 5-minute increments, by all modes for the AM and PM peak periods. The plot shows trips to durations of up to 120 minutes,[15] and excludes external trips as well as trips with the purpose of 'working on the road'. Useable trip durations were provided for just over 40% of all trips (1.3 million trips) captured in the survey: these were the trips for which the primary respondent provided both the trip start and end times, excluding obviously unreasonable outliers.[16]

Figure 4-12 presents a similar plot for the home-to-work trip. **Figure 4-13** shows the cumulative durations for all trips and work trips, for the AM and PM peak periods.

Table 4-24 summarizes the average trip duration for each group of trips. The table also lists the most frequently occurring trip durations and the 5-minute intervals by which 50% of the trips have occurred. (Note that some caution is required in using these results, in that many respondents rounded their trip departure and arrival times. Also, the work trips capture only the 'to work' trip – meaning that the PM work numbers are small relative to the other trips. The return home trip is included in the all-trips category.)

Table 4-24: Characteristics of Trip Duration – AM and PM Peak Periods

Mode	Average Trip Duration *	Most Frequent 5-min Interval	Interval by Which 50% of Trips Occur
AM All trips	26.1 min	26-30 min	16-20 min
AM Work trips	30.6 min	26-30 min	26-30 min
PM All trips	25.0 min	26-30 min	11-15 min
PM Work trips	21.2 min	11-15 min	16-20 min

* Weighted average of trip durations for trips made by primary respondents who reported arrival times, excluding external trips, trips with purposes of 'working on the road', and approximately 10% of trips with outlier durations relative to distance between origin and destination. AM All Trips n=11,275 (242,500 expanded trips), AM Trips to Work n=6,879 (154,400 expanded trips), PM All Trips n=14,853 (315,600 expanded trips), PM Peak Trips to Work n=150 (3,700 expanded trips). Trips to work exclude 'work-related' trips to locations other than the usual workplace.

On average, AM work trips have the longest duration, at 30.6 minutes, while PM work trips are shortest, at 21.2 minutes. For all trips, the AM duration is slightly longer than its PM counterpart (26.1 minutes vs. 25.0 minutes).

The most frequent intervals are at 26-30 minutes for all groups, except for PM work trips, for which the most frequent interval is 11-15 minutes (although there are very few trips to work relative to the diverse other trip purposes in this period).

PM trip durations tend to be more concentrated than those of the AM, with 50% of all PM trips occurring within 11-15 minutes. This compares with 50% of AM trip durations occurring within 16-20 minutes, with this distribution heavily influenced by the AM work trips. The AM work trips are longest (with 50% within 26-30 minutes), and shows the greatest dispersion in terms of duration (i.e., as demonstrated by significant proportions of trips to work in the 41-45 and 56-60 minute bands).

[15] 120 minutes represents a reasonable inclusion of trips in the NCR, very few trips with plausible travel speeds for the mode of travel selected had durations of greater than 120 minutes.

[16] About 10% of trips had a reported arrival time considerably at odds with the distance between the reported origin and destination, and were excluded as extreme outliers.

Figure 4-11: Trip Duration (minutes), All Trips - AM and PM Peak Periods, 2011

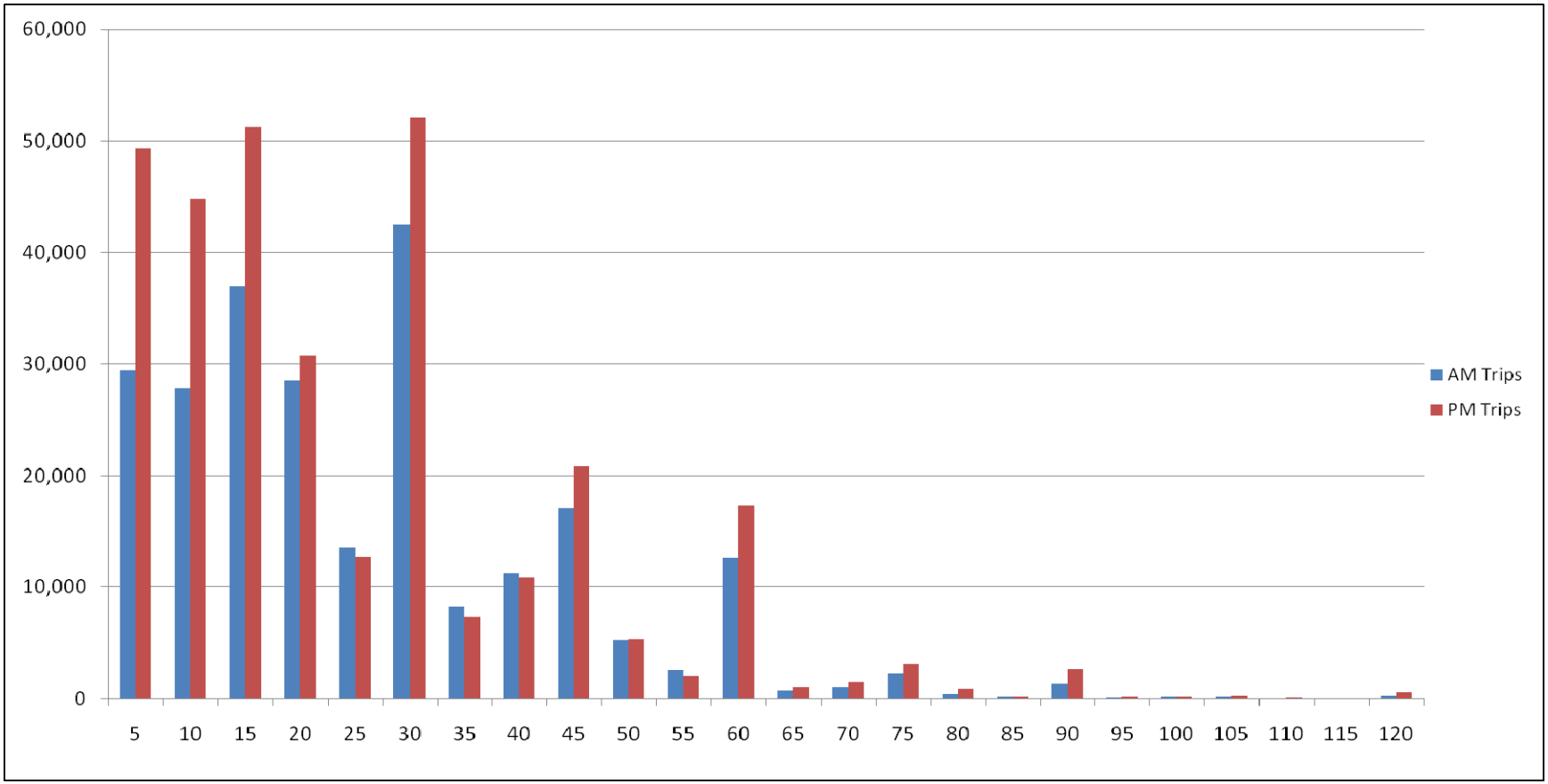


Figure 4-12: Trip Duration (minutes), Trips to Work – AM and PM Peak Periods, 2011

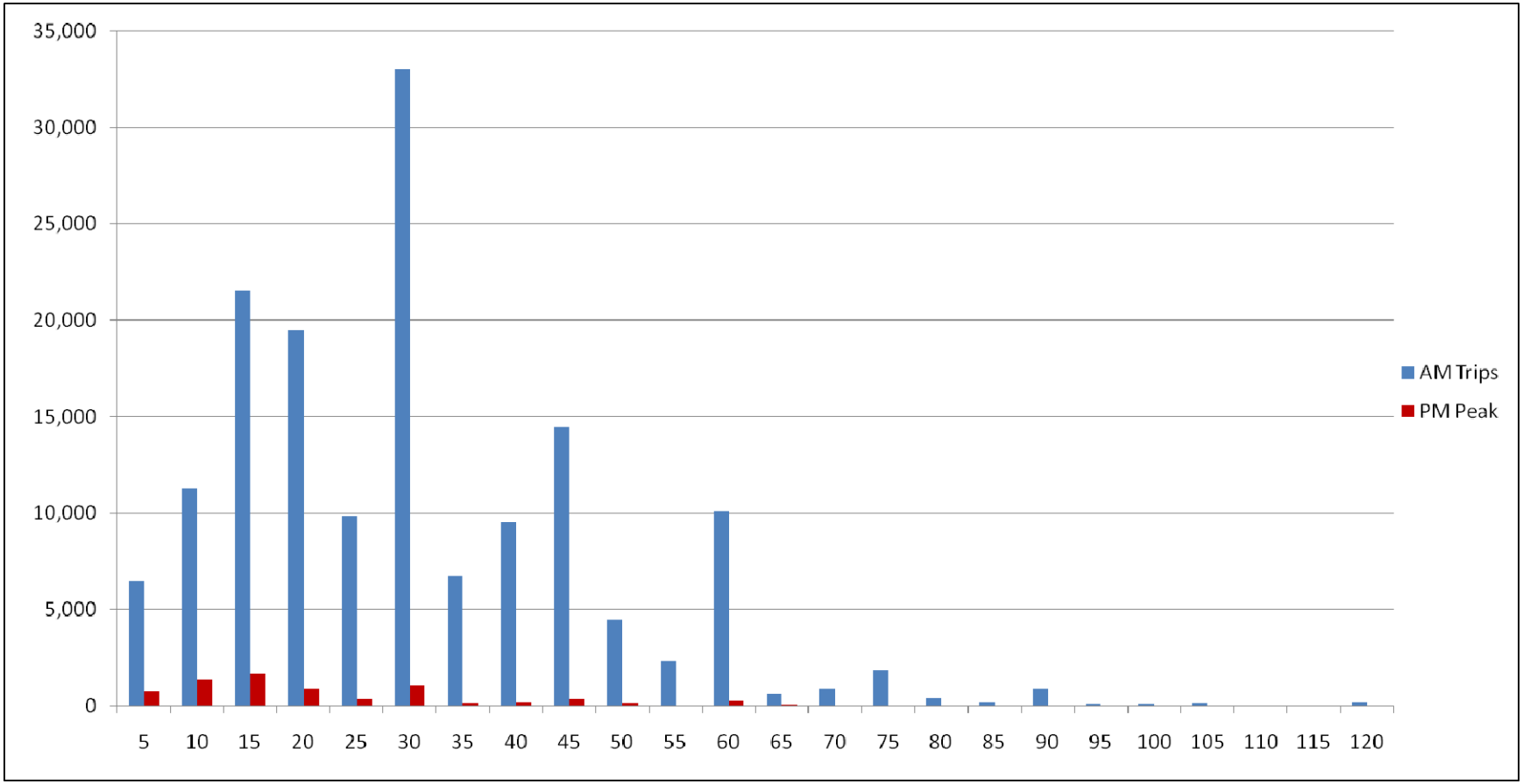
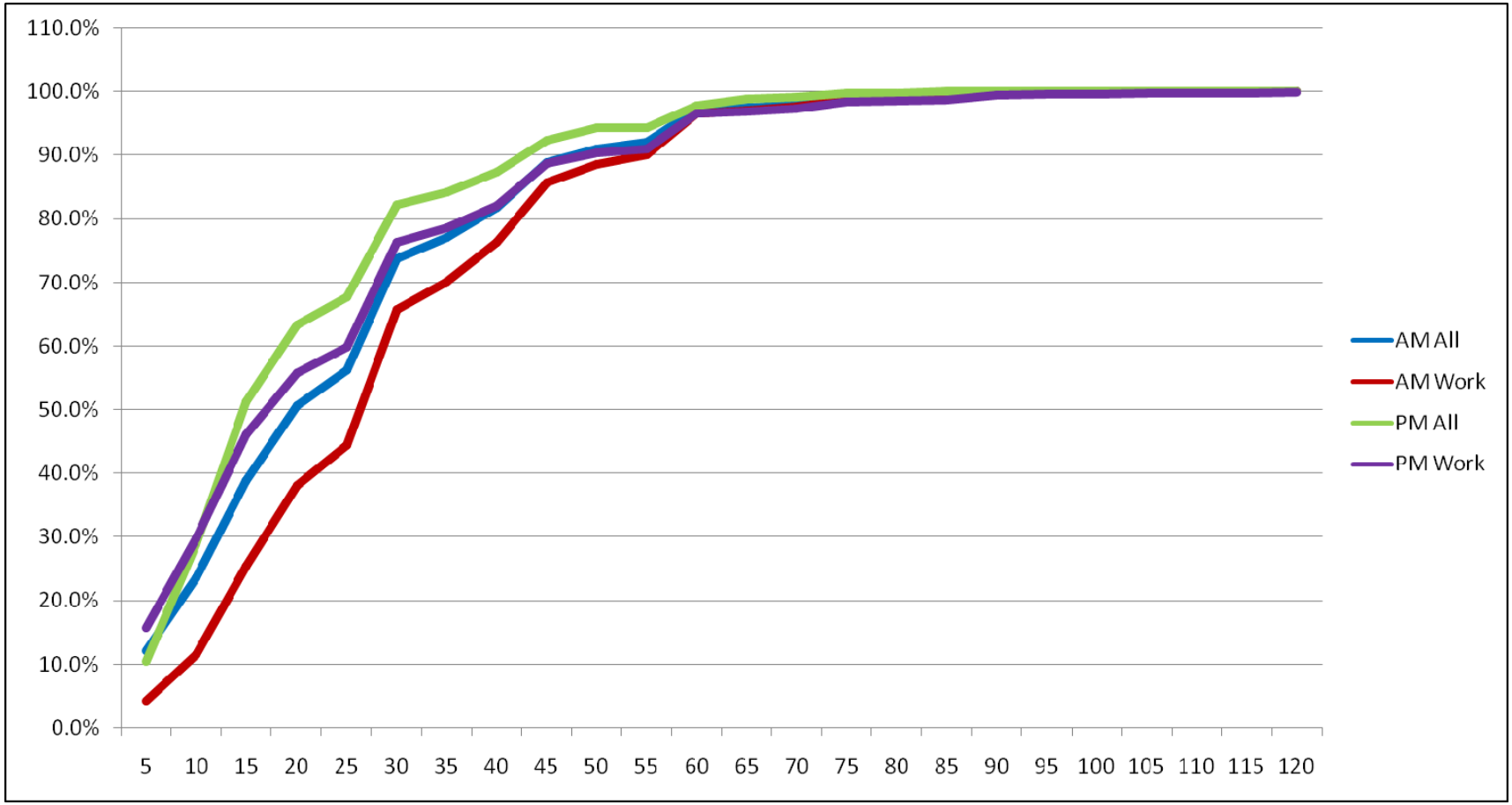


Figure 4-13: Cumulative Duration, All Trips and Work Trips, AM and PM Peak Periods, 2011



4.11 Ridesharing Characteristics

New in 2011, survey participants who indicated they were the driver for an auto trip were asked how many people were in the vehicle. (Note that the question was asked only of the primary respondent; i.e., respondents could not report this information for other people.) **Table 4-25** summarizes the results. The dominance of the single-occupant trip (70.2% of all trips) is consistent with other data sources. The results will be used for model development.

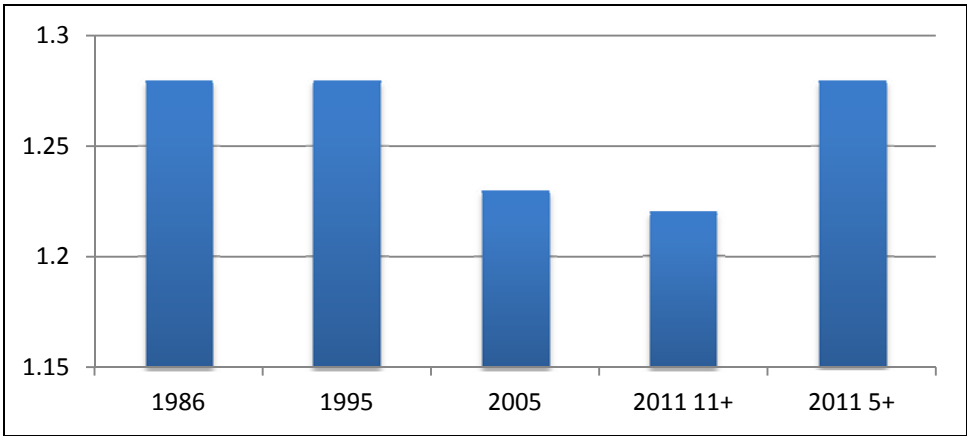
Table 4-25: Number of occupants in the vehicle, including the driver (daily), 2011

Occupants	Trips	% Total
1	751,900	70.2%
2	239,100	22.3%
3	57,000	5.3%
4	18,200	1.7%
5	3,400	0.3%
6	1,000	0.1%
7	300	0.0%
8 or more	100	0.0%
Total	1,071,100	100.0%

Values may not add due to rounding.
Excludes 2,300 auto driver trips for which vehicle occupancy was not known.

Figure 4-14 shows how auto occupancy has changed over time (as reported in **Table 4-18**). The results show a consistent decline in vehicle occupancy: this trend generally is corroborated by screenline counts. The higher average occupancy associated with the 5+ population in 2011 reflects the inclusion of younger children in the survey, compared with previous years. This also suggests the importance of including younger children in the survey. These rates are calculated by dividing the total number of auto trips (driver + passenger) by auto drivers (i.e., auto vehicles).

Figure 4-14: Change in Auto Occupancy Over Time, daily



In contrast, the occupants listed in **Table 4-25** reflect counts provided explicitly by the survey respondents. The resultant average of 1.40 persons per vehicle is significantly higher than the rates shown in **Figure 4-14**. One possible explanation for the differences may be that the explicit counts include all occupants, including children younger than 5 years; whereas auto driver and auto passenger trips reflect only those made by the surveyed population (5+).

Figure 4-15 presents the relationship of the passenger to the driver. New in 2011, the question was asked for all auto passenger trips. This information is useful in understanding the characteristics of "true" ridesharing; that is, for people who are not members of the same household. It can be seen that over 4/5 of all occurrences were with members of the same household. (The plot excludes 'decline / don't know' responses.)

Figure 4-15: Relationship of passenger to driver (daily), 2011

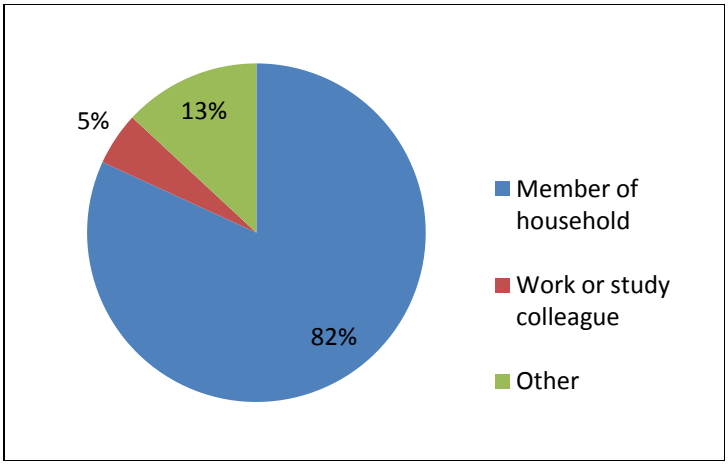


Table 4-26 breaks down the average vehicle occupant and relationship results between Ottawa and Outaouais residents. It can be seen that Outaouais residents have a slightly higher propensity to make trips with non-household members (21%, compared with 19% for Ottawa residents). However, Outaouais residents also recorded a slightly smaller average occupant – 1.39 persons per vehicle, compared with 1.41 for Ottawa respondents. Perhaps most important, both rates are consistent for both regions.

Table 4-26: Vehicle Occupant and Characteristics, 2011

Trip Origin	Auto Passenger Relationship to Driver				Average Occupant
	Household Member	Non-Household Member	Total	% Non-Household Member	Overall
Trips made by Ottawa residents	301,200	71,100	372,300	19%	1.41
Trips made by Outaouais resident	91,000	24,100	115,100	21%	1.39
Total totals	392,200	95,200	487,400	20%	1.40

Values may not add due to rounding.

4.12 Vehicle Kilometres Travelled

Vehicle kilometres travelled (VKT) is a useful measure of travel activity. **Table 4-27** summarizes VKT for all auto driver trips and again for all auto driver trips to work for 2011 and 2005. (Data were not available for 1995 or 1986.) The table also indicates the average trip length for each trip. As noted in section 4.9, the distances were derived from the TRANS travel model, in order to avoid distortions attributable to other methods. The results reveal an overall decrease in VKT. While there may be more travellers on the road—with an increase of 4.7% in auto driver trips (as reported earlier in **Table 4-19**)—those vehicle trips appear to be shorter. While from 2005 to 2011 the population rose 7.2% (as reported in **Table 4-13**), the total VKT decreased by 1.4% and the average trip length decreased even more, by 6.1%. During the same period, the employed population rose 8.2%, while the VKT for work trips decreased by 5.9%, with a corresponding 4.2% reduction in average vehicle trip length.

These reductions in total VKT and in average trip lengths may suggest a welcome progress towards more sustainable travel behaviour. They could be a function of several demographic, economic and transportation factors (such as higher transit and cycling shares), which cannot be explored further here. The addition of more data points from future surveys would help to determine trends and the underlying explanations.

Table 4-27: VKT and Average Trip Length by Auto for All Purposes and Work-Related Purposes (daily)

Survey Year	VKT		Average Trip Length	
	All	Work	All	Work
2011	17,867,700	4,625,800	10.7	13.8
2005	18,126,700	4,917,800	11.4	14.4

Note: data are not available for 1995 and 1986.

4.13 Parking Costs

Approximately 64% of workers surveyed drove to their usual place of work on the day surveyed (with the remainder either using alternative modes of transportation, working from home, travelling to a place of work other than their usual place of work, working on the road, or not working at all on the day surveyed).

The survey results suggest that approximately one-quarter of workers who drive to work pay for their parking. **Table 4-28** summarizes the average parking rates per parking period paid.

Table 4-28: Parking Costs, 2011

Type of Parking	Workers Who Drove to Usual Work	Average Parking Fees
Unknown	16,500	n/a
Free	136,700	n/a
Provided by Employer	45,100	n/a
Pay Parking	60,600	
Average Rates by Parking Term:		
Day Rate	*9,500*	*$ 10.23*
Weekly	*1,300*	*$ 22.05*
Monthly	*43,300*	*$ 94.62*
Yearly	*3,200*	*$ 368.85*
Unknown Rate	*3,300*	*unknown*

Values may not add due to rounding

4.14 Telecommuting

Table 4-29 summarizes the number of occurrences of telecommuting. Survey respondents were asked whether they telecommuted if their usual workplace was outside the home, but they did not travel to work or make any work related trips on their travel day. Among those who responded, the results suggest that approximately 1 in 10 of such persons (9.7%) telecommuted.

Table 4-29: Telecommuting, 2011

Telecommute?	No. of Occurrences
Yes	5,800
No	49,400
Decline / don't know	2,100

To put these figures in context, the expanded survey results represent 603,100 workers for whom place of work is known, excluding people whose primary occupation is that of student (whose school location was captured instead). Of these workers, 36,800 work from home, 42,200 work on the road (work outside the home but without a fixed workplace address), and 524,100 have fixed workplaces outside the home. Looking at these figures together, it appears that approximately 6.0% of all workers (excluding those whose primary occupation is student) work from home, although it is not known whether or not they worked on the day surveyed, while another 1.0% of all workers have workplaces outside the home but chose to telecommute on the day surveyed.

4.15 Breakdown of Key Indicators by Municipal Area

Table 4-30 breaks down the key demographic determinants for Ottawa and the Outaouais. Generally, the 3:1 ratio of population, households and vehicles continues to hold true, as does the 3:1 proportion of trips made by residents of the respective sides of the Ottawa River, with slightly more households and vehicles in the Outaouais than in Ottawa. Overall, travel in these regions is approximately proportional to the breakdown in population, households and vehicle availability. Employment is not included here, given the disparity of jobs between the two regions.

Table 4-30: Breakdown of Key Determinants for Ottawa and the Outaouais (daily), 2011

Municipal Area	Population	%	Households	%	Vehicles	%	Daily Trips	%
Ottawa Residents	922,000	75%	379,800	74%	508,100	73%	2,401,900	77%
Outaouais Residents	311,700	25%	130,200	26%	191,200	27%	708,300	23%
Total Survey Area Residents	1,233,800	100%	510,000	100%	699,200	100%	3,110,200	100%

Values may not add due to rounding.

Table 4-31 breaks down key travel indicators and rates for Ottawa and the Outaouais, with further distinctions according to the respective transit service areas. It can be seen that:

- The daily person trip rates are higher in Ottawa than in the Outaouais at 2.61 and 2.27 trips per person, respectively. The same holds true for the trips rates for the 5+ and 11+ populations, respectively. This is consistent with the situation in 2005.
- The respective transit service areas exhibit higher person and household trip rates than those of their associated region, with the differences being slightly greater in the Outaouais than in Ottawa. This is generally consistent with the situation in 2005.
- Average household sizes are greater in Ottawa than in the Outoauais (2.43 vs. 2.39 persons per household, respectively) as they were in 2005, although both current rates are less than those in 2005. Average vehicle availability rates are greater in the Outaouais than in Ottawa (1.47 vs. 1.34 vehicles per household, respectively), again as in 2005 but now with lower rates.

Table 4-32 summarizes auto and transit person-trip rates for the two regions and their transit service areas. Transit person-trips rates for all population groups are higher within the respective transit service areas, and all transit person-trip rates are higher in Ottawa than in the Outaouais. Auto person-trips rates are higher in the STO service area than in the Outaouais, but are lower in the UTA than in Ottawa, again for all population groups. Here, the auto person-trip rates are higher in Ottawa than in the Outoauais, but are slightly higher in the STO service area than in the UTA (or are equal). Note that, for all categories, the rates are higher for the 11+ population than for the 5+ and total populations.

Table 4-31: Selected Travel Indicators for Ottawa and the Outaouais (daily), 2011

Area	Trips / Person	Trips / Person 5+	Trips / Person 11+
Ottawa residents	2.61	2.76	2.77
*Ottawa UTA residents**	*2.62*	*2.77*	*2.79*
Outaouais residents	2.27	2.42	2.44
*STO service area residents***	*2.31*	*2.46*	*2.48*
Total Survey Area ***	2.52	2.67	2.69

Area	Trips / Person 5+	Trips / Household	Persons / Household	Vehicles / Household
Ottawa residents	2.76	6.32	2.43	1.34
Ottawa UTA residents*	2.77	6.25	2.39	1.26
Outaouais residents	2.42	5.44	2.39	1.47
STO service area residents**	2.46	5.47	2.37	1.42
Total Survey Area ***	2.67	6.10	2.42	1.37

* Urban Transit Area (UTA) is that part of the City of Ottawa that is served by transit. The UTA coverage has changed since the 2005 survey.

** The STO service area is that part of the Ville de Gatineau and the MRC des Collines-des-l'Outaouais that is served by transit. The STO service is unchanged since the 2005 survey.

*** Total survey area refers to the City of Ottawa, the Ville de Gatineau and the MRC des Collines-des-l'Outaouais.

Table 4-32: Auto and Transit Person-Trip Rates for Ottawa and the Outaouais (daily), 2011

Area	Auto Person-Trip Rate	Transit Person-Trip Rate	Auto Person-Trip Rate 5+	Transit Person-Trip Rate 5+	Auto Person-Trip Rate 11+	Transit Person-Trip Rate 11+
Ottawa residents	1.78	0.35	1.88	0.37	1.93	0.40
Ottawa UTA residents	1.74	0.38	1.85	0.41	1.89	0.43
Outaouais residents	1.73	0.23	1.85	0.25	1.90	0.26
STO service area residents	1.74	0.25	1.86	0.27	1.90	0.28
Total Survey Area	1.77	0.32	1.87	0.34	1.92	0.37

Table 4-33 summarizes auto and transit travel for the 2011 24-hour, AM peak and PM peak periods and the associated modal splits for the respective transit service areas. Note that these trips are for the 11+ population. Also, because they are based on all trip origins, they include external destinations (i.e., outside the NCR).

Table 4-33: Transit Modal Split by Area, Daily, AM and PM Peak Periods, 2011 11+

24 Hours – Trips From	Auto Driver	Auto Passenger	Transit	Total	Transit Modal Split (%)
Ottawa	1,291,400	294,800	335,300	1,921,500	17%
Ottawa UTA	1,191,700	275,300	330,600	1,797,600	18%
Outaouais	392,800	80,000	60,100	532,900	11%
STO service area	365,700	76,000	59,100	500,800	12%
Total Survey Area	1,684,100	374,800	395,400	2,454,300	16%

AM Peak Period – Trips From	Auto Driver	Auto Passenger	Transit	Total	Transit Modal Split (%)
Ottawa	231,100	42,200	90,800	364,100	25%
Ottawa UTA	205,000	37,900	88,600	331,500	27%
Outaouais	85,500	15,400	24,100	125,000	19%
STO service area	77,300	14,100	23,700	115,100	21%
Total Survey Area	316,600	57,600	114,900	489,100	23%

PM Peak Period – Trips From	Auto Driver	Auto Passenger	Transit	Total	Transit Modal Split (%)
Ottawa	304,500	64,200	92,100	460,800	20%
Ottawa UTA	287,200	60,400	91,100	438,700	21%
Outaouais	96,800	17,500	16,100	130,400	12%
STO service area	87,800	25,800	15,900	129,500	12%
Total Survey Area	396,700	80,600	108,100	585,400	18%

Values may not add due to rounding.

It can be seen that the transit modal split is higher in the transit service areas (in the PM peak period, the STO service area split is equal to that of the Outaouais). In all cases, the splits are higher for Ottawa origins than for Outaouais origins, as well as for their respective transit service areas. The highest splits occur during the AM peak periods, at 27% for trips originating in the UTA and 21% for trips originating in the STO service area. The corresponding PM peak period splits are 21% and 12%, respectively. The corresponding daily splits are 18% and 12%, respectively.

From the table, it can be determined that the auto passenger share of motorized trips was 15% for all areas over the course of the day. The auto passenger shares were higher during the PM peak period (13% to 14%, with a high of 20% for trips originating in the STO service area) than in the AM peak period (11% to 12%). With the exception of the PM peak STO origins, the lower rates indicate that auto passenger shares were higher outside the peak periods (which is consistent with lower transit use at those times of day).

4.16 Major Desire Lines

Note: Only flows greater than 2,500 person trips are shown.

shows the key desire lines – that is, the largest person-trip flows between origin and destination district – during the AM peak period. This is a graphical depiction of 'where people want to go.' The figure records only those flows greater than 2,500 person-trips in each direction, with all transportation modes and purposes combined. Note that, for the purposes of this analysis, the map combines the Ottawa Central (Centre) and Ottawa Inner Areas into a single district – this is the area bounded by the Rideau River (east and south), the Ottawa River (north) and the CPR line (west). Ottawa East and Beacon Hill are similarly combined. (All of these districts are kept separate as part of the Section 5 district summaries.)

- The top destination is the combined Ottawa Centre and Inner Area district, at 20% of all trips. In 2005, Ottawa Centre / Inner Area attracted 23% of all trips. The 2011 finding represents a slight dispersion of trips to other destinations in the NCR: the trend toward dispersion appears for other key destinations as well, as noted selectively below.

- The second top destinations are Alta Vista and Merivale, at 9% and 8% of all trips, respectively (10% and 8% in 2005, respectively).

- The Outaouais as a whole contributes 16% of the trips to Ottawa Centre / Inner Area, and the southeast sector of the City of Ottawa (Hunt Club and Alta Vista) contributes 12%.

- The City of Ottawa as a whole contributes 36% of the trips to Île de Hull (38% in 2005). Hull Périphérie, Pointe Gatineau and Gatineau East together add another 31% (36% in 2005).

- The primary destinations of trips from Orléans in the AM peak period are: Ottawa Centre/Inner Area (19%; 21% in 2005) and Ottawa East / Beacon Hill (11%; 14% in 2005).

- The primary destinations of trips from Kanata/Stittsville in the AM peak period are: Ottawa Centre / Inner Area (14%; 13% in 2005), Bayshore/Cedarview (9%; 10% in 2005) and Merivale (6%; 8% in 2005).

- Major flows entering the Greenbelt from Kanata are 65% of those from Orléans (in 2005, the proportion was about 50%).

- Other major flows not oriented towards Ottawa Centre / Inner Area or Île de Hull are from:
    - Bayshore/Cedarview to Ottawa West (13% of Bayshore/Cedarview origins).
    - Merivale to Ottawa West (12% of the trips out of Merivale).
    - Hunt Club to Alta Vista (25% of the trips out of Hunt Club).
    - Aylmer to Hull Périphérie (11% of the trips out of Aylmer).
    - Pointe Gatineau to Hull Périphérie (14% of the trips out of Pointe Gatineau).
    - Gatineau East to Hull Périphérie and to Pointe Gatineau (9% and 19% of the trips out of Gatineau East, respectively).

Figure 4-16: Major Origin-Destination Flows (by Districts) – AM peak period

Note: Only flows greater than 2,500 person trips are shown.

4.17 Interprovincial Travel

Table 4-34 and **Table 4-35** summarize, respectively, interprovincial travel for the AM and PM peak periods, for 2011, 2005 and 1995. (The tables also show intra-provincial travel: this provides a context for interprovincial trips.) The tables record trips for all modes and purposes, by origin and by destination. Note that for consistency purposes, these trips are for the 11+ population.

Table 4-34: Interprovincial Travel by Origin, AM Peak Period – 2011 11+, 2005 and 1995

	AM Peak Period 2011			AM Peak Period 2005			AM Peak Period 1995		
From / To:	Ottawa	Outaouais	Total	Ottawa	Outaouais	Total	Ottawa	Outaouais	Total
Ottawa	421,600	16,300	437,900	418,100	17,200	435,200	363,100	14,600	377,700
Outaouais	38,600	106,300	144,900	43,200	96,400	139,500	36,600	87,400	124,000
Total	460,200	122,600	582,800	461,300	113,600	574,700	399,700	102,000	501,700
'% by Origin									
Ottawa - %	96%	4%	100%	96%	4%	100%	96%	4%	100%
Outaouais - %	27%	73%	100%	31%	69%	100%	30%	70%	100%
Total - %	78%	22%	100%	80%	20%	100%	80%	20%	100%
'% by Dest'n									
Ottawa - %	92%	13%	75%	91%	15%	76%	91%	14%	75%
Outaouais - %	8%	87%	25%	9%	85%	24%	9%	86%	25%
Total - %	100%	100%	100%	100%	100%	100%	100%	100%	100%

Values may not add due to rounding.

Table 4-35: Interprovincial Travel by Origin, PM Peak Period – 2011 11+, 2005 and 1995

	PM Peak Period 2011			PM Peak Period 2005			PM Peak Period 1995		
From / To:	Ottawa	Outaouais	Total	Ottawa	Outaouais	Total	Ottawa	Outaouais	Total
Ottawa	496,700	37,600	534,300	470,900	44,200	515,100	414,400	35,300	449,700
Outaouais	18,300	122,700	141,000	19,300	112,400	131,700	15,600	109,200	124,800
Total	515,000	160,300	675,300	490,200	156,600	646,800	430,000	144,500	574,500
'% by Origin									
Ottawa - %	93%	7%	100%	91%	9%	100%	92%	8%	100%
Outaouais - %	13%	87%	100%	15%	85%	100%	13%	88%	100%
Total - %	76%	24%	100%	76%	24%	100%	75%	25%	100%
'% by Dest'n									
Ottawa - %	96%	23%	79%	96%	28%	80%	96%	24%	78%
Outaouais - %	4%	77%	21%	4%	72%	20%	4%	76%	22%
Total - %	100%	100%	100%	100%	100%	100%	100%	100%	100%

Values may not add due to rounding.

Key points to note:

- Generally, the distributions of trips – that is, the proportions of trips crossing the Ottawa River and the proportions that remain within each region – have been stable, with little variation over the years. However, it is important to note that the absolute volumes of person-trips crossing the Ottawa River have dropped since 2005, although they are still higher than the 1995 volumes. This is true for both the AM and PM peak periods.
- Overall, trip volumes have grown, from which it can be seen that more trips are staying within each region.
- In all years, the dominant interprovincial flows were generated by Outaouais residents crossing to Ottawa in the AM peak period, and returning in the PM peak period.

- The tables indicate that 27% of all trips originating in the Outaouais during the AM peak period crossed the Ottawa River in 2011 – down from 31% in 2005 and 30% in 1995. The corresponding figure for Ottawa-based trips remains stable at 4%, since 1995.
- In the PM peak period, 7% of all trips destined to the Outaouais originated in Ottawa – down slightly from 9% in 2005 and 8% in 1995.

4.18 Core Area Travel

In 2011 (11+ population), 17% of all AM peak period trips in the survey area, and 26% of work trips, were attracted to the core; that is to Ottawa Centre (the area north of Gloucester Street) and Île de Hull. Both percentages were the same as in 2005.

The core's transit shares were 33% of 24-hour trip destinations, 45% of AM peak period destinations and 44% of PM peak period origins. Among all the TRANS districts, Ottawa Centre had the highest transit shares: 36% of 24-hour trip destinations (compared with 30% in 2005), 49% of AM peak period destinations (43% in 2005) and 48% of PM peak period origins (41% in 2005). For Île de Hull, the 2011 transit shares were 25% of 24-hour destinations (21% in 2005), 34% of AM peak period destinations (32% in 2005) and 32% of PM peak period origins (29% in 2005). **All of these represent increases over 2005**. (Further details on the 2011 figures may be found in the district break downs in Section 5.)

4.19 Internal Travel

Internal travel is a measure of the accessibility of opportunities – work, school, shopping, etc. – close to a traveller's place of residence. The closer proximity of these activities to one's home in turn can be more conducive to sustainable transportation alternatives to driving alone (transit, walking and cycling). The three tables below provide different perspectives on internalization. Each table tabulates internal trips (those originating in and destined to the same district) as a percent of total trips originating within the district. (**Figure 5-1** in Section 5 presents a map of the districts.)

- **Table 4-36** summarizes internalization rates for all trip purposes originating within each district. It can be seen that Kanata – Stittsville, South Nepean and Orléans in Ottawa, and Aylmer and Masson-Angers in the Outaouais have the highest rates of internalization. Of interest, this suggests a higher internalization rate for Ottawa's three older Urban Communities than for other suburban communities inside the Greenbelt. The overall average internalization rate for Ottawa, the Outaouais and the NCR is 42%.
- **Table 4-37** provides a similar tabulation, but for trips to work. Ottawa Centre has the highest internalization rate (50%). Alta Vista (32%), Kanata – Stittsville (34%) and Hull Périphérie (31%) and Masson-Angers (36%) have the next highest rates. Overall, the work trip internalization rates are 24% for Ottawa, 22% for the Outaouais and 24% for the NCR as a whole.
- **Table 4-38** presents the internalization rates for all trips made by residents of each district. The two previous tabulations comprised trips made by residents and non-residents, so long as the trip originated within the district. Overall, the internalization rates are significantly higher, with 60% of trips made by Ottawa residents staying within Ottawa. Outaouais has a lower percentage (56%), likely reflecting in part the 'net export' of work trips to Ottawa.

The overall NCR average is 59%. The three Urban Communities again have the highest internalization percentages: Kanata- Stittsville (74%), South Nepean (63%) and Orléans (67%), again reflecting the 'self-containment' of opportunities within these communities. Hull Périphérie (65%) and Masson-Angers (70%) have the highest internalization rates in the Outaouais. The higher rates reflect school trips, but also generally suggest that residents of a district conduct many personal activities closer to home (e.g., shopping), even if they do not actually work in the same district.

Table 4-36: Internalization of Travel – All Trips (daily)

District	Internal Trips	Total Trip Origins	% Internal
Ottawa Centre	27,700	160,500	17%
Ottawa Inner Area	108,400	284,600	38%
Ottawa East	49,200	132,400	37%
Beacon Hill	29,100	84,700	34%
Alta Vista	85,200	238,200	36%
Hunt Club	42,200	121,300	35%
Merivale	87,700	242,000	36%
Ottawa West	57,900	153,300	38%
Bayshore/Cedarview	72,900	188,500	39%
Orleans	151,200	247,700	61%
Rural East	3,700	17,700	21%
Rural Southeast	16,400	42,100	39%
South Gloucester / Leitrim	12,000	33,900	35%
South Nepean	79,900	143,100	56%
Rural Southwest	18,000	47,800	38%
Kanata - Stittsville	161,300	258,000	63%
Rural West	15,600	38,000	41%
Ottawa	1,018,300	2,433,800	42%
Île de Hull	7,200	54,600	13%
Hull Périphérie	51,200	128,100	40%
Plateau	11,400	41,100	28%
Aylmer	42,900	80,700	53%
Rural Northwest	13,400	31,800	42%
Pointe Gatineau	62,300	134,900	46%
Gatineau Est	44,600	96,700	46%
Rural Northeast	11,100	40,300	28%
Masson-Angers	27,800	45,100	62%
Outaouais	271,700	653,300	42%
Total	**1,290,000**	**3,087,100**	**42%**

Values may not add due to rounding.

Table 4-37: Internalization of Travel – Work Trips (daily)

District	Internal Trips	Total Trip Origins	% Internal
Ottawa Centre	8,300	16,600	50%
Ottawa Inner Area	11,400	44,700	26%
Ottawa East	4,100	22,200	18%
Beacon Hill	2,800	13,300	21%
Alta Vista	10,800	33,400	32%
Hunt Club	3,700	23,300	16%
Merivale	8,200	35,200	23%
Ottawa West	4,700	22,700	21%
Bayshore/Cedarview	7,300	33,100	22%
Orleans	9,500	48,100	20%
Rural East	700	4,400	16%
Rural Southeast	2,200	10,500	21%
South Gloucester / Leitrim	700	7,100	10%
South Nepean	4,700	30,400	15%
Rural Southwest	1,900	10,000	19%
Kanata - Stittsville	14,500	42,400	34%
Rural West	1,900	9,000	21%
Ottawa	97,400	406,400	24%
Île de Hull	1,600	6,200	26%
Hull Périphérie	6,400	20,900	31%
Plateau	400	11,000	4%
Aylmer	3,300	18,200	18%
Rural Northwest	1,900	7,700	25%
Pointe Gatineau	5,400	23,800	23%
Gatineau Est	4,700	22,000	21%
Rural Northeast	1,900	12,700	15%
Masson-Angers	3,800	10,600	36%
Outaouais	29,400	133,100	22%
Total	**126,800**	**539,500**	**24%**

Values may not add due to rounding.

Table 4-38: Internalization of Travel – All Trips Made by District Residents (daily)

District	Internal Trips	Total Trip Origins	% Internal
Ottawa Centre	12,300	20,100	61%
Ottawa Inner Area	99,600	163,900	61%
Ottawa East	45,000	80,300	56%
Beacon Hill	26,300	48,600	54%
Alta Vista	73,900	124,600	59%
Hunt Club	39,200	83,200	47%
Merivale	74,400	130,200	57%
Ottawa West	51,300	89,000	58%
Bayshore/Cedarview	65,700	121,800	54%
Orleans	147,700	219,700	67%
Rural East	3,700	13,600	27%
Rural Southeast	16,300	36,900	44%
South Gloucester / Leitrim	11,700	25,700	46%
South Nepean	77,800	124,400	63%
Rural Southwest	17,700	37,800	47%
Kanata - Stittsville	152,300	206,700	74%
Rural West	15,200	33,000	46%
Ottawa	930,100	1,559,500	60%
Île de Hull	5,500	12,100	45%
Hull Périphérie	44,900	69,600	65%
Plateau	11,100	33,100	34%
Aylmer	42,200	70,700	60%
Rural Northwest	13,100	25,700	51%
Pointe Gatineau	57,000	91,500	62%
Gatineau Est	42,900	77,200	56%
Rural Northeast	10,800	35,500	30%
Masson-Angers	26,900	38,300	70%
Outaouais	254,400	453,700	56%
Total	**1,184,500**	**2,013,200**	**59%**

Values may not add due to rounding.

4.20 Trip Chains

A 'trip chain' is the sequence of trips that starts and ends at home. For example: home to work to shopping to home has three elements. **Table 4-39** lists the 16 most frequent trip chains, by unique order (i.e., home-to-work-to-shopping is different from home-to-shopping-to-work-to-home). These represent slightly less than 1/3 (31.13%) of all 2,568 observed unique combinations.[17] (This very large number includes chains up to 24 segments in length, although the vast majority of unique combinations have 6 or fewer segments.) By comparison, the top 50 chains represent just over 1/3 (34.55%) of the chains. It can be seen that to work and to school (i.e., compulsory trips) are the most frequently observed in chain: 8.93% and 6.07%, respectively, for a total of 15.00%.

[17] By comparison, there are 1,579 non-uniquely ordered chains. However, there is very little difference in the proportion of all trips (31.21%, vs. 31.13% according to the unique tabulation).

Most of the top 16 are single-purpose trips, before returning home ('out and back'). The 16th chain ('return home', with no other trip recorded within the 24-hour period surveyed) represents travellers who went out before "yesterday" and returned home yesterday (e.g., returning from a recreational trip, returning home from work at night, having travelled outside of the region). These represented 0.30% of all trips.

Table 4-39: Top 16 Trip Chains – Unique Order (daily), 2011

Rank	Frequency	% Total Trips	Purpose 1	Purpose 2	Purpose 3
1	277,888	8.93%	Travel to work	Return home	
2	188,717	6.07%	School	Return home	
3	126,454	4.07%	Shopping/household maintenance	Return home	
4	81,478	2.62%	Recreation	Return home	
5	50,451	1.62%	Other	Return home	
6	34,175	1.10%	Visit friends/family	Return home	
7	33,548	1.08%	Work related	Return home	
8	30,690	0.99%	Drive someone	Return home	
9	30,583	0.98%	Pick someone up	Return home	
10	27,857	0.90%	Health and personal care	Return home	
11	22,920	0.74%	Restaurant	Return home	
12	19,170	0.62%	Shopping/household maintenance	Shopping/household maintenance	Return home
13	15,156	0.49%	Travel to work	Shopping/household maintenance	Return home
14	9,966	0.32%	Working on the road	Return home	
15	9,950	0.32%	Drive someone	Travel to work	Return home
16	9,364	0.30%	Return home		
Sum 1 - 16	968,367	31.13%			
Sum 1 - 50	1,074,705	34.55%			
All	3,110,300	100.00%			